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A Citizen's Guide to the Forest and Rangeland Renewable Resources Planning Act

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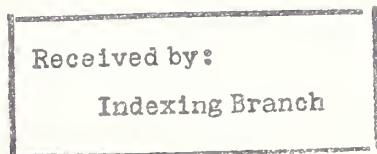
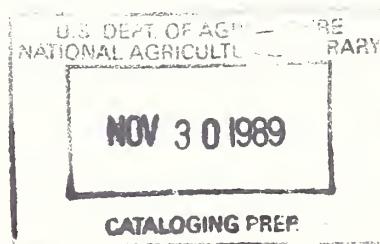


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A CITIZEN'S GUIDE
TO THE FOREST AND RANGELAND
RENEWABLE RESOURCES PLANNING ACT

Edited by

William E. Shands



June 1981

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ACKNOWLEDGMENT

The Conservation Foundation wishes to thank the many people, both inside and outside the Forest Service, who provided ideas and information for the papers in this manual and who reviewed and commented upon the papers, particularly those written by Conservation Foundation staff, as they were being prepared. Peter C. Kirby of the Wilderness Society; Maitland Sharpe, Isaak Walton League; and Gene Bergoffen of the National Forest Products Association, and Robert E. Wolf, Congressional Research Service, were especially helpful in reviewing the drafts of many of the papers. A number of people in the Forest Service also provided constructive comments: J. Lamar Beasley, deputy chief; Thomas Hamilton, RPA staff director; Charles R. Hartgraves, land management planning staff director; Lawrence W. Hill, land management planning staff; Robert M. Lake, director, Public Information and Involvement; Richard E. Greffenius and John H. Thompson, State and Private Forestry; Elwood L. (Dick) Shafer, Research; and Glenn A. Kovar, Office of Information staff and project liaison. Ms. Joyce Parker of the Land Management Planning staff conducted an intensive review of the paper on Regional and Forest Planning.

All comments were considered carefully, and many stimulated a number of clarifying adjustments in the text. However, the views expressed in the papers in this Guide are those of the authors, who, of course, also are responsible for any errors.

The manuscripts were edited by Stuart Rohrer, with final production work by Robert McCoy. Dan Wilson, Tony Brown and particularly Bernice Hudson spent long hours typing the manuscripts.

PREFACE

The Resources Planning Act and the National Forest Management Act which amends it mandate the most ambitious resources planning effort ever attempted by this country. Over the next five years as National Forest plans are completed, state forestry plans developed, and the RPA Program updated, thousands of people representing diverse interests and segments of society will review, comment on, and argue over the management proposals for individual forests and the direction of forest policy, regionally and nationally.

RPA was enacted in 1974 with great expectations. Speaking in the Senate just before its vote on RPA, Senator Herman Talmadge, chairman of the Senate Committee on Agriculture, noted the escalating friction between competing resource uses and declared:

The Assessments and Programs this law will produce will provide a meeting ground to reach sensible decisions...and the evaluation procedures [it] includes will permit both the executive and Congress to have a good body of facts upon which to act.

RPA could not immediately resolve all the conflicts. Disputes over silvicultural methods--specifically clear-cutting--persisted. The National Forest Management Act was stimulated by legal decisions that threatened to curtail sharply timber harvesting on the National Forests. NFMA wiped out restrictive clauses of the 1897 Organic Act and built a new framework with the RPA process for national forest management to augment the Multiple Use-Sustained Yield Act of 1960.

The Resources Planning Act is almost seven years old; the second Assessment and Program were sent to Congress in June of 1980. The NFMA amendments have been in the statute books since 1976, though the extensive regulations that implemented them were only made final in September of 1979.

What have the Acts accomplished? Certainly, they have not eliminated conflicts, reduced administrative appeals of Forest Service decisions substantially, or lessened the threat of lawsuits.

But RPA and NFMA are still young. Expecting them to resolve complex forest issues so soon is like expecting a toddler to run a four-minute mile. The processes they establish are still being developed and, it is to be hoped, improved. A truer test will come over the next five years as planning for forest management continues and the 1985 RPA Program update is prepared.

The eight papers in this series both explain and analyze these Acts and their implementation. They were written by The Conservation Foundation staff specialists in public lands policy and by authorities in forest policy and land management. Arthur Cooper, for example, who co-authored the paper on coordination with state and local governments, chaired the Committee of Scientists that worked with the Forest Service to develop the planning regulations. Perry Hagenstein, who examines the Assessment and Program documents, served on the professional staff of the Public Land Law Review Commission of the late 1960s which extensively reviewed public lands policy and legislation. Other authors, like Sally Fairfax and Paul Culhane, have been acute observers of forest policy in their academic roles.

The reader will discover that these writers hold varied views of RPA and NFMA. In general they are sympathetic to the objectives of the Acts, yet they point out problems in their execution. Some of these problems probably are transitory and will be worked out as the practitioners and the public become familiar with the process. Others, such as the need to develop the knowledge needed for RPA and NFMA described by Robert Harris, a former associate deputy chief of Forest Service Research, will require new information and analytical methodologies. These should not be beyond the capabilities of Forest Service staff. Far more worrisome are the potential effects of the laws on Forest Service thinking and action raised by Fairfax. One can only hope that her fears will be dispelled as Forest Service planners become familiar with the planning process and recognize its benefits as well as drawbacks.

Taken together, these authors examine nearly every major facet of RPA and NFMA and their execution--from the development of the Assessment and Program to the effects on Forest Service assistance to state and private forestry and forestry research, participation by the public, and coordination with the land and resource planning conducted by the states and local governments.

This series was prepared as a part of an extensive public information and education project conducted by The Conservation Foundation in cooperation with the Forest Service. The papers were reviewed for technical accuracy by Forest Service staff specialists, who offered positive and constructive comments. However, the views expressed are those of the authors.

The Conservation Foundation encouraged each author to identify issues and be provocative. The results should stimulate sharp discussion of the Acts and actions to implement them by all interested parties: the Forest Service, states and local governments, private landowners, and the concerned public. Only in this way can the expectations many hold for RPA be fulfilled.

WILLIAM E. SHANDS
June, 1981

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OVERVIEW: FOREST AND RANGELAND
RENEWABLE RESOURCES PLANNING

By William E. Shands

INTRODUCTION

"The sap is coming to a boil on our forest lands," declared the late Senator Hubert H. Humphrey in 1973 when he introduced legislation that was to become the Forest and Rangeland Renewable Resources Planning Act of 1974. The management of the National Forests, then as now, was the subject of intense controversy. Liquidation of old-growth in the National Forests of the Pacific Northwest to offset the depletion of the old-growth inventory on industrial forestlands, clear-cutting in the mixed hardwood forests in the Appalachians, wilderness designation, the adequacy of funding for soil, range, recreation and wildlife programs--these were topics of heated debate.

Humphrey believed that the inevitable conflict over policy was exacerbated by the nation's failure to develop a long-range program for integrated management of all the forest and range resources. "Both we in the Congress and the executive branch have totally failed to organize our plans for the protection of our forest and range resources and for meeting our renewable resources needs," he said in opening hearings on the legislation. "...To put it bluntly, we have a mess on our hands. Instead of having a comprehensive plan for the governing and protection of our resources, we have tended to focus on each problem individually..."

Jim Giltmeier, senate staff member who played a major role in drafting the legislation says, "Humphrey sought a process that would permit decision makers to cut a clear path through the thicket of patchwork forest policy in a way that the public could help determine where the paths would eventually lead."

William E. Shands is a Senior Associate at The Conservation Foundation.

The Forest and Rangeland Renewable Resources Planning Act of 1974--or more simply, RPA--established a planning process that is comprehensive, long-range, and continuous.

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In its broadest sense, RPA's purview is the 1.7 billion acres classified as forest or rangeland, along with associated lakes and streams. This, the nation's forest and rangeland renewable resource base, constitutes about 70 percent of the country. About 46 percent--including vast holdings in Alaska--is in federal ownership; the remainder is privately held or owned by state and local governments.

The RPA Assessment is intended to develop an inventory of all forest and rangeland resources in all ownerships; thus it includes lands administered not only by the Forest Service, but also other federal agencies such as the Bureau of Land Management, National Park Service, and Fish and Wildlife Service, and lands in state, local and private ownership.

The RPA Program applies only to the Forest Service. But although it has special meaning for federal lands, the RPA Program will leave its affect on the activities of state foresters, and other state resource managers, because of federal-state cooperative programs; it will influence the decisions made by large timber companies and owners of small woodlands; it will restrict or enhance the activities of National Forest users--hikers, hunters, timber companies; and it will affect governors and local officials whose states and communities are influenced by federal decisions based on RPA Program direction. Not the least important, it will affect the prices consumers will pay for forest products and services. It is not land use planning in the sense of federal or state regulation of private lands, but it is planning and budgeting at the policy level that will have profound effects on land use, public and private.

Programs Related to RPA

Though only 6 1/2 years old, RPA already has spawned progeny. The Renewable Resources Research Act (RRRA), The Renewable Research Extension Act (RREA) and Cooperative Forestry Assistance Act all enacted in 1978, updated other statutes aimed at improving forest management

and linked them to RPA. The Soil and Water Resources Conservation Act (RCA) also enacted by Congress in 1978 calls for development of an appraisal of and long-range program for the nation's soil and water resources. RCA is the responsibility of another agency of the Department of Agriculture, the Soil Conservation Service. The first Appraisal and draft Program were released for public comment early in 1980.

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RPA's reach is extending further. As noted previously, the forest and range resources managed by many other federal agencies, particularly the National Park Service, Fish and Wildlife Service and Bureau of Land Management (BLM), are considered in the RPA Assessment. In his 1979 environmental message, President Carter called on the BLM to develop a long-range program like that of the Forest Service's and to coordinate the BLM Program with the RPA Program. In addition, many state forestry agencies are preparing state versions of the national Assessment and Program.

Through RPA the United States has begun long-range natural resources policy planning on an unprecedented scale. Potentially, RPA could provide long-term coherence to renewable resources programs of all levels of government. Says Theodore Natti, director of Forests and Lands for the state of New Hampshire, "RPA is the best vehicle that has come along to coordinate the Federal-state roles in forestry planning."

By identifying program duplication and overlap, RPA could improve efficiency in resource management. It could provide a sound basis for Congressional appropriations by identifying program areas where additional funds are required, or, in times of fiscal austerity, pinpointing those programs which could be cut back with minimum long-term resource impact. That RPA was having an impact was evident in the scrutiny the Office of Management and Budget gave the 1980 RPA Program. Associate Chief Douglas B. Leitz observed that the OMB paid close attention to the Program "because it is considered the driving mechanism for the Forest Service budget request, and a powerful lever on what Congress eventually appropriates."

While the RPA process has been established and institutionalized, the slate is still largely

blank. It could turn out to be a chimera. It could create expectations on the part of the public that the resource managers will be unable to meet. Inability to achieve targets, or a failure to translate the plans into on-the-ground activities and programs apparent to the forest-using public, could lead to disillusionment. In addition to the challenge of administering a process of such complexity, Forest Service achievement of Program goals and targets depends on funding appropriations--a process the Forest Service does not control. RPA's potential will be realized only if RPA is used by the Executive branch and the Congress.

Why RPA?

The Forest Service has never lacked for laws to guide its basic activities. The Organic Administration Act of 1897, the Weeks Law of 1911, the Multiple Use-Sustained Yield Act, and the Wilderness Act, among other laws, provided direction for management of the National Forests and Grasslands; the Clarke-McNary Act, the Cooperative Forest Management Act, and Water-shed Protection and Flood Prevention Act, were among statutes which all or in part provided for cooperative relationships with states and private landowners; the McSweeney-McNary Act, McIntire-Stennis Act, Agriculture and Consumer Protection Act, and others provided authority for Forest Service research and cooperation with university research efforts.

Nor is the planning required by RPA new to the Forest Service. The Forest Service had prepared rudimentary long-range programs -- such as the Environmental Program for the Future, published in 1974. Beginning in the late 1960's, the Forest Service began to develop a land management planning process for the national forests which has been modified and improved over the years. RPA, in fact, simply recognized a planning process already underway and included all three Forest Service activities: National Forest administration, State and Private Forestry, and Research.

Before RPA, however, Congress had no real stake in these Forest Service planning initiatives. Budgeting and appropriations were not linked to any clear set of long range goals for forest resources management. Further, it was difficult, if not impossible, for the public or

the Congress to trace what was occurring on the ground to a visible policy directive from Washington. Also, Forest Service State and Private Forestry and Research programs were not considered in relation to the management of the national forests, or even firmly tied to the needs of states and private forest landowners. Finally, many observers felt that the information upon which Forest Service decisions were based was woefully inadequate, particularly with regard to non-timber resources. Senator Humphrey said: "It's high time that we establish some sort of mechanism upon which the government, assisted by its people, can develop intelligent policy decisions regarding the use of our forests and rangeland."

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The Forest and Rangeland Renewable Resources Planning Act was intended to provide a framework for long-range resources planning. There were some explicit Congressional objectives.

First, Congress recognized that policy should be based on the best available facts and that data was lacking or inadequate in a number of areas; it wanted better information, systematically updated, upon which to base funding authorizations and appropriations.

Second, Congress wanted resources planning and management by the federal government coordinated--to the extent possible--with that of the states, local units of government and the private sector. Congress also wanted to impose greater accountability on the executive branch and the Forest Service. Another implicit objective was to strengthen Congressional control over Forest Service programs. Recognizing that renewable resources were also a private sector responsibility, Congress also wanted the private sector role better defined.

Finally, Congress wanted the public to have greater awareness of Forest Service programs and the Forest Service to be more aware of public views, nationally and locally.

The National Forest Management Act

While establishing the mechanism to provide national direction on renewable resources policy, RPA did not provide the level of detail necessary to resolve long-standing National Forest resource conflicts -- for example, where, when and how to

use various forest silvicultural systems, such as selection or clear-cutting. In 1976, the RPA was supplemented by the extensive amendments of the National Forest Management Act (NFMA) which added important provisions to RPA. First, it firmly bonded the National Forest planning process to RPA. Second, it provided detailed procedural standards and guidelines for managing the National Forests, primarily to insure that all forest resources were given equal consideration. It inserted specifications for public participation in the national forest planning process and for coordination of National Forest planning with that of states, local units of government, and Indian tribes.

The statutory provisions of NFMA have been further defined by extensive regulations which spell out in detail how the forests are to be managed. Forest plans are to be the mechanisms for resolving forest use conflicts. NFMA is an integral part of RPA, and when we refer to RPA, we include the amending provisions of NFMA. (Indeed, some writers in this manual refer to the act as RPA/NFMA to remind readers of the link.) In our lexicon the RPA process encompasses not only the development of the RPA Assessment and Program,--the two documents that establish national direction for renewable resources policy and programs--but Forest Service plans at the regional and National Forest levels, and plans for assistance to state and private forestry and research. There are, however, differences in the degree to which RPA can affect National Forest planning, which is entirely within the control of the Forest Service, and planning and management of private lands over which the Forest Service has no control. Similarly, forest and range research is conducted not only by Forest Service personnel, but also researchers in universities and the private sector who are not directly susceptible to RPA planning.

THE ELEMENTS OF RPA

RPA provides a base for political decision-making. It is rooted in the idea that with the best available information, the political process will result in better decisions than are possible when poor or no data are available. The political and professional decision makers will have

a better understanding of the effects likely to occur from their decisions. The Act establishes a process for inventory and assessment of the nation's forest and rangeland renewable resources and the development of a national renewable resources Program, a mechanism for Presidential interpretation and expression of commitment to the Program, and a powerful oversight role for Congress.

Accountability throughout the system is the hallmark of RPA. The Program establishes goals and targets against which Forest Service performance can be measured. The President's budget requests and Congressional appropriations also can be compared to the funding levels of the Program.

Five major themes pervade the RPA process:

- o Consideration is to be given all resources in determining the biologically and economically optimum mix of resource use.
- o The Forest Service is continuously to improve its data collection capabilities, and programs are to be based on this information.
- o More than ever before, resource management decisions are to use improved economic analysis.
- o Federal programs are to be coordinated with those of state and local governments.
- o The public is to be involved throughout the Forest Service decision-making process.

In short, RPA establishes a planning process that is intended to be comprehensive, long-range, and visible.

At this point, it is useful to examine each component of the RPA process. The full text of the Act is appended as Appendix B. For now, it is not important to cover every provision of the Act, but to understand the major products, timing, and linkages. The major components are the RPA Assessment and Program, the President's policy statement, Congressional action, National Forest planning, and planning for research and assistance to state and private forestry.

The Assessment And Program

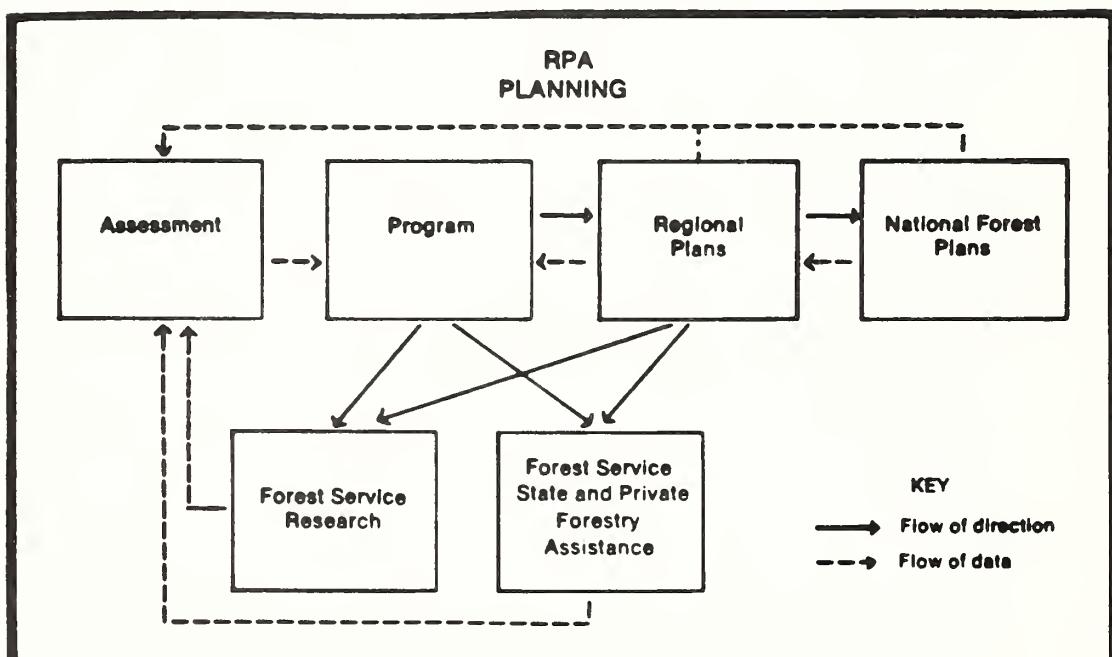
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The Assessment and Program together constitute the national plan for forest and rangeland renewable resources.

The Assessment is to provide a status report on the condition and capability of all the nation's forest, rangeland and associated inland water resources. In addition to the five resources covered by the Multiple-Use Sustained Yield Act--outdoor recreation, timber, water, range, and fish and wildlife--the Forest Service has included wilderness, minerals, and community and human development. The Assessment is to be updated at 10-year intervals. While the next full Assessment is not due until 1990, the Forest Service is considering the preparation of a Supplement to the 1980 Assessment in 1985.

The Assessment is to provide the information foundation for the Program. However, other federal resource agencies and non-federal planners should also find the information useful. Data on supply and demand--present and potential--and the identification of opportunities for increasing supply, are to be emphasized in the Assessment.

ELEMENTS OF RPA



The nucleus of the data will be contained in an inventory of renewable resources--again, those resources both presently available and those which might be provided in the future. The Assessment is to analyze use of forest and range-land resources--both present and anticipated --and weigh supply against this use. Supply and demand are to be evaluated in terms of impacts on prices of forest services and products, an important provision in inflation-sensitive times.

As a first step in defining the Forest Service role in conserving and providing renewable resources services and products, the Assessment is to explain how National Forest System management, Forest Service state and private forestry assistance, and research affect one another, and how they influence other federal agencies' programs, those of states and local governments, and the private sector.

Finally the Assessment is to discuss "important policy considerations, laws, regulations and other factors expected to influence and affect significantly the use, ownership, and management of forest, range and other associated lands."

The status of the nation's renewable resources undoubtedly will change during the 10 years between Assessment updates; the Assessment then can be thought of as a still picture that captures (albeit imperfectly) a moving scene.

With the Assessment as its information base, the Program is to be a plan of action for the Forest Service for a minimum of four decades in the future. Said Assistant Agriculture Secretary M. Rupert Cutler when the draft 1980 program was released, "Everything the Forest Service does in the next several decades will be tied back to this long-range plan."

The 1980 Program (in which the Forest Service chose to look ahead 50 years, to 2030) establishes Forest Service targets for decade intervals.

The Program covers all Forest Service activities in management of the 187 million-acre National Forest System, in support of state and private forestry, and in forestry research. While management of the federal forests and grasslands within the National Forest System is

the largest Forest Service program in terms of manpower and money, the Program also establishes the thrust and funding levels for state and private forestry assistance and an agenda for research.

The Program does not prescribe a program for other federal land management agencies, states, or private forests and range land owners, although the RPA requires that management opportunities for other forest and rangeland owners are to be defined. In defining the Forest Service's role in renewable resources management and the production of goods and services, the Program identifies potential roles for other forest and range owners as well. The five alternative program directions considered for the 1980 Program show how various possible roles for the national forests could be matched or contrasted with state and private forestry assistance and how national forest system direction could be expected to affect the management programs of states and private landowners.

As with the Assessment, the Congress provided a long list of items it wanted included in the Program. Several themes are apparent.

Foremost is economic analysis of management options. Investment opportunities are to be identified and weighed against "outputs, results anticipated and benefits..." The Program is to establish program priorities based on economic analysis, including the evaluation of anticipated costs and benefits. Then the Congress asked the Forest Service to specify "personnel requirements" to do the job.

The Act also contains standards for Program recommendations. These requirements go to the fundamentals of resource conservation and management. First, the traditional principles of multiple use and sustained yield are not to be violated in establishing Program objectives. Second, plans must, according to the Act, "recognize the fundamental need to protect, and where appropriate improve, the quality of soil, water, and air resources."

Third, the Program's national goals must recognize resource relationships and interdependencies. This means the Program must assess

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the impact of management direction for one resource--say timber, or recreation--in terms of the effect on other resources. This has led the Forest Service to seek to develop a methodology for assessing, quantitatively and qualitatively, these cross-resource impacts.

As a result of a suit brought by the Sierra Club, the Forest Service agreed to prepare an environmental impact statement on the 1975 Program. Thus the National Environmental Policy Act's environmental impact statement (EIS) requirement has significantly influenced the Program's content and format. The Forest Service integrated the EIS with its analysis of alternative Program directions, evaluating the environmental impacts of different management directions and funding levels.

The Program is to be updated at five-year intervals. Although the next will not be sent to Congress until 1985, this does not mean that there will be a five-year pause in Program development; just months after the 1980 Program was sent to Congress, the Forest Service began planning for the 1985 update.

The Assessment and Program are not prepared by the Forest Service in a vacuum. In the preparation of the 1980 documents, there were periodic briefings of interest groups and citizens by regional foresters and forest supervisors from around the country. Drafts of the Assessment and Program were published and widely circulated for review and comment by any interested party. The then Assistant Secretary of Agriculture with responsibility for the Forest Service, Dr. M. Rupert Cutler, was frequently consulted on the process and participated in the selection of the recommended program direction along with other departmental officials. The Assessment and Program were subjected to close scrutiny within the Department of Agriculture. Other relevant federal agencies also had a chance to review and comment on both documents.

With completion of the Assessment and recommended Program by the Forest Service, action passes to the President and his advisors, particularly the Office of Management and Budget. OMB, the Chief Executive's budget and program coordinating office, reviews the RPA Program to

see if it is consistent with Presidential budget policy. The President, of course, is responsible for the President's Statement of Policy which is to accompany the Program when it is sent to the Congress.

President's Policy Statement

The Presidential Statement of Policy is an important feature of the RPA process. In practical terms, it reveals the extent of the Presidential commitment to the recommended Program. The policy statement, according to the Act, is to serve as the basis of Presidential budget requests and to "express in qualitative and quantitative terms the extent to which programs and policies projected under the budget" conform to the statement. Thus, the policy statement is the principal instrument for enforcing Presidential accountability; subsequent Presidential action can be measured against the Statement of Policy.

Congressional Action

The Assessment, Program and Presidential policy statement are sent to the Congress. Here, timing is important. The President submits his budget to Congress in January soon after the Congress convenes. Thus if the RPA Program is to be reflected in the President's budget, the Program must be completed in the previous December. Also, it is in the Forest Service's interest to have the Program in the hands of the Congressional appropriations committees as they consider the President's budget.

The Act required that the first (1975) Program be transmitted to the Congress by December 31, 1975, but says that it must be updated "no later than during the first half of the fiscal year ending September 30, 1980, and the first half of each fifth fiscal year thereafter." This implies that the Program can be submitted as late as March 31, the midway point in the fiscal year that ends each September 30. Obviously, transmission of the Program to Congress that late in the fiscal year puts it out of synchronization with Congressional consideration of the budget.

Transmission of the Assessment, Program and Presidential policy statement to the Congress, whenever that occurs, automatically inserts the Program into the Congressional appropriations process. At minimum, the Program is to be considered by Congress as it frames appropriations in response to the President's budget. But Congress has other, powerful, options. It can take the President's Statement of Policy and revise it, or reject it outright. If Congress modifies it, the revised statement is to serve as the basis for future Presidential budget requests.*

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Once received by Congress, whether modified or not, the President's Statement of Policy becomes a joint governmental statement of policy, with the expectation that both the Executive and Congress will rationally weigh the nation's needs for resource management and development in framing budgets and approving appropriations.

National Forest Planning**

The National Forest Management Act firmly linked National Forest System planning to RPA. The original RPA's Section 6 tersely directed the Forest Service to prepare plans for individual units of the National Forest System (a process which was already underway), required that they be coordinated with the plans of state and local governments, and developed through an interdisciplinary approach. NFMA's five-page amendment to RPA's Section 6 amplified planning requirements and provided Congressional direction for overall management of the National Forests and Grasslands.

* The Congress did approve a revision of the former President's 1980 Statement of Policy. This is discussed in the following paper on "The 1980 RPA Assessment and Program."

** In the western United States, it is important to understand the relationship between the Forest Service and the Bureau of Land Management and its planning system. The BLM

National Forest planning is an integral part of the RPA process:

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- National Forest plans should supply much of the information for the Assessment, particularly data on national forest productive capability.
- It is through the National Forest plans that much of the RPA Program is actually implemented.
- It is at the National Forest planning level that the general public can most effectively influence RPA.

It is important to understand how these National Forest plans are linked to RPA. The RPA Program provides national direction for the Forest Service. It tells what programs are to be emphasized and establishes national targets, quantitatively, for National Forest and grassland services and products.

RPA does not dictate the actual planning process. This is set forth in the Forest Service's regulations implementing RPA's Section 6.

administers 370 million acres of federal land, almost all of it in the 11 western-most contiguous states and Alaska. In many areas, BLM managed land is interlocked with the National Forests and often public land users do not distinguish between the two systems. BLM is implementing a planning process as elaborate as that of the Forest Service and is preparing plans for its management units. BLM and the Forest Service have endeavored to make their planning processes as similar as possible to reduce confusion on the part of those who use both federal land systems. President Carter directed both agencies to improve coordination of their field operations, including public involvement, coordination with state and local governments, and exchanges of land between the two agencies. Thus, a familiarity with the Forest Service's RPA Program development and planning procedures is helpful for people who also follow BLM activity.

Each of the nine Forest Service administrative regions is to develop a regional plan, and each unit of the National Forest System is to prepare a land management plan.* Thus, there are three planning levels: national, regional, and National Forest.

The RPA Program establishes national targets for forest products and services and then assigns a portion of the national targets to each of the nine administrative regions. Each regional forester then is to assign a portion of the regional allocation to each National Forest and grassland in his region. If each forest hits its targets, then so will each region and the national targets will be achieved.

The process, of course, is not this crisp --yet. Whether it will ever be is open to question.

The Assessment, as pointed out earlier, is to be the basis of the Program. Ideally, that portion of the Assessment dealing with the Federal forests should represent an aggregation of the productive capabilities of each of the 154 National Forests and Grasslands. There are immense problems involved in assessing capability, not to mention their aggregation at the regional and national levels: available data is not that good. Methodology for considering all resources and interactions among them when assessing the capability of a tract of land to supply, for example, timber, is still crude.

The 1979 Assessment updated some of the basic inventory data but still relied heavily on available information. The Forest Service is working hard on developing methodology to improve data collection, particularly at the forest level. Ultimately, National Forest plans based on land capability should form the basis of production estimates provided by each forest to the regions and by the regions to the Washington office, there to be used to develop the Program.

* The regulations and the regional and forest planning process are described in another paper in this Guide, "Regional and National Forest Planning."

Thus, there is an information flow from the National Forests to Washington that is the companion to that of the allocation of targets from Washington via the RPA Program to the National Forests. The problem, then, is to mesh the upward flow of capability information with the downward flow of production direction.

The crucial link, which might be likened to the transmission of an automobile, is the regional forester. He and his staff will have to take the data from the National Forests within a region, aggregate and analyze them, and transmit the data and supporting analysis to the Washington office. When regional targets come down from Washington, the regional forester must then distribute the region's allocation among the National Forests, presumably in accordance with the earlier capability information. The regional forester, then, must reconcile RPA Program targets with the forests' capabilities. The Forest Service envisions a process of negotiation at each level: the Chief negotiating regional targets with the regional foresters, the regional foresters negotiating, in turn, with each National Forest supervisor.

A fundamental and critical question arises as to whether the RPA Program is to be based upon the resource data developed by the National Forests or to be driven by the Program direction from Washington. Some observers argue that there should not be complete reliance on the forest estimates--that Washington should analyze the data, but might well decide that capability estimates are too conservative. Gene Bergoffen of the National Forest Product Association, for example, believes that the Washington office should not slavishly accept National Forest estimates and that the forests should be required to strive to achieve the targets assigned them and justify why they cannot. Others, such as Peter Kirby of the Wilderness Society, argue for some flexibility in target setting and achievement, fearing that resource quality might be sacrificed in the field in the attempt to meet unrealistic national or regional goals. Thus, whether RPA is essentially a top-down or bottom-up process is going to be a subject of continuing debate. Obviously, if the targets are unrealistic in terms of the resource base, they cannot be achieved.

At this stage, the coordination of the Program, regional, and National Forest plans is complicated by the fact that all three planning levels are operating on different time cycles and speeds. Following the automobile analogy, it's as if the engine were running at one speed, the transmission at another and the car's differential at yet another. The national RPA Program is complete. Regions have begun working on their plans, but some are ahead of others. The draft regional plan for the Forest Service's Northern Region (Region I - Montana, Northern Idaho, North Dakota, and a small portion of South Dakota); was released to the public in November, 1980. Other regional plans are due in the Spring of 1981. There is similar disparity among National Forests. Many have plans which were completed before enactment of the National Forest Management Act and which must now be revised. Others have plans begun under the old planning system which are now in various stages of completion. In 1979, the Forest Service designated a "lead forest" for each region which was to serve as a kind of laboratory for preparing a National Forest plan in accordance with the NFMA amendments and the new planning regulations. While the "lead forest" idea was later discarded, some of these forests are well advanced in their planning, and, in fact, were ahead of their regions in early 1981. Some lead forest plans were at an advanced stage prior to release of the 1980 RPA.

Another complicating factor is the cycles of Forest Service work planning.

The President's budget is a compilation of budgets prepared by the various Federal agencies. The Forest Service, as the case in point, prepares budget alternatives based on work plans and cost estimates developed by National Forest supervisors and their counterparts in State and Private Forestry and Research. These budget alternatives are submitted to the Department of Agriculture, which reviews them and arrives at figures for the Forest Service which are included in the budget of the Department of Agriculture. The departmental budget is scrutinized and probably modified again by the Office of Management and Budget.

It takes time to prepare the budget. The Washington office begins developing budget direction three years in advance of the fiscal year

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it covers. National Forest supervisors begin preparing work plans two years in advance of the fiscal year. Thus, work began on the Forest Service's budget for Fiscal Year 1981 (which begins October 1, 1980) back in 1977. By providing a long-term Program and annual funding targets to accomplish Program objectives, RPA could make Forest Service budgeting easier. There is the need to mesh the rolling process of budget preparation with the periodic revision of the Program and Assessment.

STATE AND PRIVATE FORESTRY

Federal programs to assist state forestry agencies and private landowners authorized by the Cooperative Forestry Assistance Act of 1978 and other legislation are actually implemented by the states as part of their own forestry programs. Thus, development of state forestry programs, plans, and budgets is the basic building block of the S&PF contribution to the RPA Program. The two Forest Service S&PF Area offices in the East (at Broomall, Pa. for the Northeastern area and Atlanta, Ga. for the Southeastern area), and the Forest Service regional offices in the West, all monitor state planning in their regions. Based on the state's identification of issues, program emphasis and proposed funding priorities and levels of anticipated federal assistance, S&PF officials in each region prepare an action proposal to be considered in the regional forester's regional plan. The sum of regional plan proposals for S&PF assistance then becomes the basis for developing the RPA Program's S&PF component.

The Department of Agriculture has placed high priority on improving the effectiveness of programs aimed at the small woodland owner--a principal target of S&PF assistance. In response, the Forest Service has sponsored several other efforts to examine its programs of assistance to small forest landowners. The first was an in-house study that was published and disseminated as The Federal Role in the Conservation and Management of Private Nonindustrial Forest Lands.

In 1979, the Forest Service provided funds to the National Association of State Foresters to conduct a series of regional conferences on non-industrial private forestry and a national

conference in Washington. These meetings were aimed at eliciting the views of state forestry officials, private landowners, conservationists, the timber industry, and others, on issues of concern to the private, non-industrial forest landowner. The report of these conferences should also help shape S&PF elements of the Program.*

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The RPA Program will determine the level of Federal funding for state and private forestry and to what extent private forest landowners will be depended upon to help satisfy national timber needs.

FOREST AND RANGE RESEARCH

The Resources Planning Act requires that Forest Service Research contribute to the accomplishment of RPA Program goals.

Soon after the 1975 RPA Program was sent to the Congress, Research began thinking about how it could better link its research projects to the RPA Program. The reason was simple: funding for forestry research was not keeping pace with need or the effects of inflation on the research dollar. It was evident that a key to winning support for research funding was to demonstrate that research was indeed aimed at nourishing forestry activities that accomplished RPA goals. This objective was reinforced by the Renewable Resources Research Act of 1978, which updated and consolidated research authority. It was also thought that it would be helpful to involve a broader range of users in identifying research needs--and perhaps forge stronger recreation, wildlife habitat and wilderness components.

To accomplish this, the Forest Service and universities held a series of meetings around the country, and sponsored a symposium conducted by the Renewable Resources Foundation--a consortium of a dozen professional organizations--to secure a broad range of views on the future thrust of research conducted or sponsored by the Forest Service.

* These issues and S&PF are discussed in "Private Forests and the Public Interest" in this Guide.

Upon completion of the research planning program, Robert E. Buckman, Forest Service deputy chief for Research, and Donald P. Duncan, representing land grant-colleges, wrote: "This is not our first coordinated planning effort. However, what is new is our effort to involve broad public participation in the process."

The national research program is intended to help answer difficult questions of forest management posed by the RPA Program, and to coordinate the activities of researchers, whether working in Forest Service experiment stations or in university laboratories.*

RPA AS A DYNAMIC PROCESS

This paper has emphasized RPA as a dynamic process still very much in the developmental stage. The 1979 Assessment and 1980 Program documents are a substantial improvement over the 1975 versions, which were produced in just 18 months. Likewise, the generation of National Forest plans now being developed and which will conform to the 1979 planning regulations show promise, despite substantial difficulties of coordination, of being far superior to those developed during the 1970s.

However, both the 1975 and 1980 Assessments and Programs can be regarded as experiments in the adequacy of data and intellectual processes. The 1985 Program update, which should be nourished by the information in regional and National Forest plans, and by the forestry programs of the states, should provide a clearer picture of the effectiveness of RPA as a management tool.

* Issues associated with Forest Service research are discussed in detail in the paper "Forest Service Research" in this guide.

THE 1980 RPA ASSESSMENT AND PROGRAM DOCUMENTS

By Perry R. Hagenstein

INTRODUCTION

The Renewable Resources Planning Act (RPA) requires two major national documents: the Assessment of the Forest and Range Lands Situation in the United States (Assessment) and the Recommended Renewable Resources Program (Program). The first such set of documents was prepared in 1975. The 1979 Assessment and the 1980 Program are the second of each kind.

The Secretary of Agriculture is responsible for preparing the Assessment and Program and submitting them to the President. The Forest Service is responsible for collecting the necessary information, analyzing it, and drafting the two documents. The President is required to submit the Assessment and Program to Congress together with a policy statement to be used in framing budget requests. But in practice, the three executive branch actors decide jointly on the contents of the documents well before they are completed.

This paper reviews the 1980 Assessment and Program documents, beginning with an examination of the premise on which they are based, followed by a discussion of the analytical and institutional constraints faced by the Forest Service in drafting them. Finally, the documents themselves are critiqued in terms of how well they serve their intended purposes, but in light of the analytical and institutional constraints. The paper is intended to help those following development of the 1985 Program update evaluate that process. Further, persons monitoring the preparation of regional and forest plans, and state forestry programs should understand how the Assessment and Program were prepared and how they will influence state and forest plans.

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I. THE PREMISE

Broadly, the Assessment is intended to identify problems related to U.S. forest and range resources that may be significant in future years. The Program has two general functions: to evaluate alternative roles for the Forest Service in meeting these problems and to provide information to support a recommended level of programs appropriate to those roles.

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Both documents are national in scope, but must reflect the real local conditions of the lands and the activities that take place on them. Since U.S. forest and range lands are varied and widely distributed, the documents are detailed and complex. This brief description can only begin to convey all of the complexity in the lands and programs with which they deal.

The Assessment

The Assessment describes the current conditions of this country's forest and range lands and their capacity to meet demands for commodities and uses that may be placed on them over the next 50 years. It is a national statement based on information collected at regional, state, and local levels and assembled to provide an overall description of national conditions and trends. Some of the regional and state detail is maintained in the Assessment, but aggregation of information to meet reasonable standards of statistical accuracy and dependability results in some loss of detail.

The task of organizing and presenting this information is complicated by conflicts between national and local uses of forests and range-lands. Projections of future demand based on recent trends for commodities such as timber or forage for domestic livestock recognize that these commodities serve essentially national, and even international, markets. Thus, projections are derived from indicated relationships to population and economic activity, the major forces that determine levels of demands on a national basis. By contrast, other uses of forest and range, such as protection of water supplies or recreation, satisfy primarily local or regional demands. Demand projections for these uses are made on an area-to-area basis and assembled to obtain total national projections.

Set against these projections of future demands is an evaluation of the current condition of forests and range and of the potential output (production of commodities and services) from them. Current conditions and levels of output from forest and range lands reflect previous uses of these lands and both past and present levels of management. Future levels of output or production from forest and range lands are projected on the basis of assumptions about levels of management and use and the behavior of major categories of landowners.

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Projections of possible production are then compared with projections of demand to predict whether demands can be expected to be in balance with, or exceed, potentially available supplies. The implications of this analysis for the price of commodities and services and for the condition of forests and range are then determined. For example, shortages of timber are expected to lead to increases in prices which would stimulate increased timber harvests until timber supply is in equilibrium with demand.

Projections in the Assessment are carefully stated in terms of assumptions; they are defined as projections of what will occur only if the assumed conditions come to pass. It would be possible to vary these assumptions and to reach different conclusions about future forest and range conditions.

Thus, the Assessment presents a picture of forests and rangelands and their conditions as they are and, within tightly defined assumptions, as they are likely to be. This is not necessarily a picture of forests and rangelands as either the authors of the Assessment or the public that uses them would like them to be or to become. It shows how outside forces affect the use and condition of the lands, but it does not show the effect of the lands and their use on such outside factors as the national economy or social well-being.

Even in its projection of uses, the Assessment is limited in its view to those that occur now as they are portrayed in information on trends. While the current and traditional uses of forests and range will almost certainly continue to be the major uses into the foreseeable future, little attention is given to the possibility of new uses.

For example, the dramatic rise in recent years of the use of motorized off-road vehicles and snowmobiles has made this a significant, and controversial, current use of forests and rangelands, one which was hardly perceived 20 years ago. The potential for similar innovations in the future use of these lands, however, is not examined in the Assessment.

The Assessment describes separately each of six major resources or uses of forests and range-lands -- outdoor recreation and wilderness, wildlife and fish, range, timber, water and minerals -- against a background description of the forest and range resource as a whole. The reader is cautioned throughout that none of these resources or users exists in isolation from others, and a separate chapter provides a detailed description of some of the interactions that take place among the resources and uses. Scientific information and data needs that would improve an appraisal of this type are identified.

The Assessment defines problems or issues primarily in terms of the expected inability (if the present situation continues) of forests and rangelands to provide sufficient resources or uses to avoid substantial increases in prices. It also identifies opportunities to increase the output of various resources, although the cost and means of meeting these opportunities are left for examination in the Program.

The Program

The Program document, A Recommended Renewable Resources Program: 1980 Update, is intended as a response to the problems and opportunities identified in the Assessment. Its purpose is to evaluate alternative Forest Service program directions and levels and to identify a five-year program to be recommended to the President. Such a program is to specify Forest Service activities and budget levels to help improve the conditions of forest and range lands to allow them more nearly to meet expected demands.

While the Assessment evaluates conditions on all forest and range lands in the United States, with recognition of differences between major ownership categories, the Program deals only with the responsibilities of the Forest Service as now defined. These responsibilities range from almost

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total management responsibility for the forests and range on the National Forests and Grasslands, through various cooperative programs with the states that provide financial and technical assistance on state and privately owned forest lands (but not range lands), to little or no responsibility for forests and range administered by other federal agencies. In addition, the Forest Service is responsible for administering the nation's major forestry research program, with a current annual budget of about \$110 million, and for helping coordinate federal expenditures or grant programs that support forestry and range research at land-grant universities.

It is important to recognize that because the extent of Forest Service authority varies among the resources and uses, the Program cannot be expected to fully responsive to all of the problems identified in the Assessment. For example, while Forest Service responsibilities for timber resources are large because of the extent of the National Forests and sizeable cooperative forestry programs with the states, the Forest Service responsibilities for range resources are much more limited.

Because of the Program's importance, an environmental impact statement was integrated into it. To meet the requirements of the National Environmental Policy Act (NEPA), the Program compares five alternative program directions with the recommended Program. These alternatives represent a range of possible combinations of resource outputs, budget levels, and emphases on different ownership categories. The alternatives are simply identified by number:

- Alternative 1: highest level of programs emphasizing both market and nonmarket products and services;
- Alternative 2: lowest level of programs but, still in compliance with current laws;
- Alternative 3: the level recommended in the 1975 Program;
- Alternative 4: emphasis on nonmarket resources on National Forests and substantial increases in Forest Service programs to encourage increased management and production on state and private lands;

- Alternative 5: a continuation of current trends in Forest Service programs.

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The comparision of alternatives is based on statements of expected results in meeting national goals for each of 12 program elements.* The goals for each element are stated in terms of optional directions or levels of management. For example, the first goal for the recreation element is alternatively stated as providing for a significantly increased share from the national forests in providing recreation opportunities, for a moderately increased share, for the current share, and for a decreased share.

For each program element under each alternative, there is a discussion of the Forest Service program activities that will be necessary to meet the stated goals. The costs of undertaking the indicated programs are estimated for each alternative, as are their physical-biological, economic, and social effects.

At the insistence of the Carter administration, the Forest Service prepared a recommended Program, with high and low "bounds" delimiting a range of Forest Service activities and levels of forest and range resource production. The low bound is based on what amounts to continuing Forest Service programs and costs [appropriations] at their 1981 level until 1985, then increasing them somewhat by 1990, and maintaining a nearly constant level thereafter. The high bound supports a substantial increase in program costs by 1985, followed by smaller increases over the next decade or more to a plateau substantially above the low bound. At each boundary of the range of programs, some shifts are envisaged in the present proportion of costs going to various activities.

* Recreation, wilderness, wildlife and fish, range, timber, water, minerals, human and community development, protection (from wild-fires, insects, and disease), lands (which covers planning, land management, and related activities), soils (maintenance of soil productivity), and facilities.

The range of production levels encompassed by the high and low bounds includes, for most activities, production levels that are consistent with two or three of the program alternatives. That is, neither of the bounds, nor the range they encompass is directly tied to any single alternative that was described in the draft Program document. The Program described by the range within the two bounds is derived from parts of each of the alternatives in the draft Program document.

In response to a comment by the General Accounting Office on the 1975 Program, the 1980 Program also contains a discussion of 14 "issues of concern to the Congress and general public." These issues in most cases reflect long-standing concerns or programs of the Forest Service (e.g., "production of wood and wood products from non-industrial private lands" or "utilization of hardwoods"). Others reflect more recent concerns (e.g., wood fiber as an energy source") and still others reflect concerns that, at first glance, appear to be newly conceived (e.g., forestry assistance for nonfederal public lands). The discussion of these 14 issues is general and contains little data. It appears, however, that identification of these issues had little to do with the definition of alternative program directions.

Previous Parallel Efforts

Although RPA is a recent piece of legislation (1974), the documents it requires can be viewed as part of a series dating back to the McSweeny-McNary Act of 1928, which mandated periodic assessments of timber supplies. Prior to 1974, nationwide analyses were prepared at about 10-year intervals, comparing prospective timber requirements with the condition and likely future condition of forest lands. A forest survey was organized to provide on a state-by-state basis the necessary information about forest lands and timber growth to make such comparisons possible. The present Assessment and Program, as well as those prepared in 1975, are much broader in their coverage of resources and uses other than timber (for one thing, range is now included in the scope of the analyses). Further, the National Forest Management Act of 1976 amendments to the RPA provided clearer authority for tying the assessment of forest and range lands to a Forest Service program and budget.

In addition to being broader in scope, the current Assessment and Program are considerably more sophisticated in their use of analytical techniques than were their predecessors. Although modern systems analyses do not in themselves assure better projections of future events than did the relatively clumsy techniques of earlier analyses, they provide a means for more readily testing the effects of alternative assumptions and formulations. In this sense, the current Assessment is a vast improvement over earlier efforts.

The requirement that the Assessment cover all forest and range resources forces it to deal more realistically with the problems of multiple uses on these lands than those previous analyses that focused only on timber. Although the organization of both the Assessment and the Program still separates the discussion of one resource or use from that of another, the interplay among them is discussed and provides a basic ingredient for program evaluations.

II. REASONABLE EXPECTATIONS

Appropriate standards for judging the quality and adequacy of the Assessment and Program depend in large part on the conditions under which the documents are prepared. It must be recognized that the Forest Service operates within a set of institutional constraints that limits its ability to define the product that is ultimately produced in the Assessment and Program documents. Additionally, the availability of data and the "state of the art" of analysis of resource problems limit the kind and quality of work that can be done.

Institutional Constraints

RPA was the result of several years of discussion in Congress about the purposes to be served by the National Forests. Growing interest in recreation and related uses in the management of the National Forests led traditional users of timber and range resources to believe their claim on these resources was being weakened. In 1969, the forest products industry lobbied hard for the "Timber Supply Bill," which would have provided a revolving fund from timber receipts to assure financing of timber management programs on the

National Forests. Although it was defeated in the House of Representatives, support for such a measure remained strong in ensuing years.

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At the same time, recreational and wildlife interests became increasingly concerned that their favored management programs were not being adequately funded. The culprits in this case were the Office of Management and Budget (OMB) and, to a much lesser extent, the Congressional appropriations committees. It appeared to some that timber programs on the National Forests were given favored treatment relative to other programs because receipts for timber sales provided a standard for making appropriations. That is, Congress could measure return on investment for timber, but not for recreation or wildlife programs.

The forest products industry was the strongest supporter of a legislative solution to the problems of National Forest management, but opposition to a timber supply bill by itself foreclosed Congressional action. However, there was room for compromise legislation -- the Forest and Rangeland Renewable Resources Planning Act (RPA). Instead of providing favored treatment for one National Forest resource or another, the RPA established a process for defining management opportunities and for setting priorities among them. At the national level, this was to be done through the mechanism of the Program, which was to be prepared by professionals in the Forest Service and sent to Capitol Hill every five years where it would be accepted, along with budget goals for the next five years, by the Congress. The Program was thus to be set standards for judging the behavior of both the Office of Management and Budget and the Congress with respect to future budgets and appropriations for Forest Service programs.

The Assessment and, in particular, the Program must be judged in part as the outgrowth of compromise legislation. Although on their face they are required by Congress and are to be the guide for Congressional appropriations for the Forest Service, one should be somewhat skeptical about the extent of Congressional, or even White House, commitment to the Program. Indeed, there is little evidence that one Congress has ever been able to commit its successors to any sustained direction, regardless of its seeming good

sense. Additionally, there is little evidence that the OMB has ever been responsive to needs identified outside of the annual budget process and the imperatives of Presidential politics.

Also, the requirement that the Program be submitted by the President to Congress for its review and approval flavors the analysis and the results because of the Forest Service's and the Administration's perception of what will happen when the Program gets to Congress. Rather than being the piece that orchestrates the appropriations for the Forest Service, the RPA Program is but one step in the "dance" of the annual appropriations process. Like the other steps, it is used variously as a standard for measuring performance, as a means for diverting attention, as a lightning rod for drawing criticism, and as one of many sources of information for Congress and OMB.

In preparing and submitting the Program, the Forest Service faces much the same problem with its annual budget requests that it faced in years prior to RPA. That is, the Forest Service's proposed Program as expressed in annual budgets must inevitably compete with other claims on the federal budget. This is the very essence of the whole budget and appropriations process and it has been changed little by passage of RPA. For the Forest Service, the Program provides an additional avenue for supporting and justifying budget requests, but they still must be weighed on scales piled high with other social needs.

The fact that the RPA Program is used to justify budgets and appropriations means that agreement on proposed program levels is less the result of analysis than of negotiation among the involved parties. These include the Forest Service, the Department of Agriculture, and the President as represented by OMB.

For the Forest Service, the initial drafts of a Program provide an opportunity to define a range of options. The alternate program levels offer plenty of opportunity for the Forest Service to lobby within the administration for increases in Programs. At the same time, it can use the description of "low level" alternatives to vividly portray what might befall the nation if its programs are not funded adequately. Even during times of tight budgets, the recommended Program

is unlikely to be the "low level" alternative, which is posed, in effect, as what would happen if the Administration and Congress took leave of their senses and their responsibilities for providing goods and services the public wants and needs.

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The Program and its evaluation of alternatives, thus, are constrained by the role the Program plays in the budget and appropriations process. It is stated initially by the Forest Service in terms that are intended to convince OMB and Congress that increased program budgets are necessary. After negotiations within the executive branch are completed, the Program has to be framed in terms of providing support for a level of programs that is consistent with the President's view of overall claims on available funds. Those who view the Program document and its recommendations as simply the result of analyses and comparisons of alternatives based on calculations by the Forest Service are certain to be disappointed.

Data and Analytical Constraints

The impact of institutional constraints on the Program document is equaled by the limitations of data and analytical models for making resource assessments and evaluating programs. Because the tools and data for massive planning exercises like the Assessment and Program have limitations, the results are inevitably open to question. One position with respect to the recommended Program can be reasonably supported against another by varying assumptions about the data or manipulating the analytical framework, and there will be no powerful basis for resolving the dispute.

As noted earlier, the Assessment provides projections based on carefully specified assumptions about the future. A fundamental assumption in the Assessment is that the demand for resources and uses of forests and rangelands will be determined generally within a free market framework. The task of defining a market framework for projecting demands is difficult, however, because of the complexity of the markets for goods and services in the United States.

The approach used in the Assessment is to extend recent trends in use of major forest and range resources in relation to national population

and income. While the Forest Service has had experience in making such projections for timber products and has developed a "feel" for the approach, it has had little similar experience with non-timber resources. Furthermore, simply extending trends provides little understanding of the potential for substitution among products or the response of users to price changes.

There are similar problems with the approach used to project the quantities of various resources and uses that will be made available. It is assumed that resources from private lands will be made available in response to market conditions. The problems with the projection framework are different for private and public lands. For private lands, there are considerable differences of opinion regarding the motivations of private landowners. It seems evident that most private landowners are motivated in substantial part by economics; that is, they will invest in management and sell forest and range resources if doing so appears profitable. But it is also evident that their economic behavior is modified or constrained by a variety of other motivations, including such things as pride of ownership and aesthetic concerns.

Besides, timber and forage for domestic livestock are practically the only resources or uses of private forests and rangelands that have active markets. Landowner behavior with respect to managing and supplying fish and wildlife, water, and general recreation on private forests and range is even less well understood than behavior regarding marketable commodities.

For public lands, it is evident that resources are not provided solely in response to market conditions. Although constrained significantly by market forces in managing forest and range resources (labor and equipment, for example, must be purchased in the marketplace), most agencies act differently than private landowners. This is especially evident with respect to resources and uses such as recreation and wildlife for which ordinary markets do not exist. These are, by law and by practice, major uses of most public forests and rangelands and are generally supplied free of charge, even though there are costs of supplying them.

The assumption made in the Assessment for public forests and rangelands is that renewable resources will be supplied in the future in accordance with present management plans. The aura of certainty that this gives to projections for these lands, however, is unwarranted even though the approach may not be unreasonable in the absence of other, more accurate, models of behavior for public land managers. Management of public lands does respond to changed conditions, albeit more hesitantly than does management of private lands. Thus, the approach used in the Assessment for projecting management of public forests and rangelands is also weak, largely because future actions are projected on the basis of present actions rather than in response to future conditions.

Finally, the Assessment must provide a means to connect projections of demand for resources, which are tied to nationally estimated determinants such as population and national income, with the resources themselves, which are produced locally. The problem then is to allocate in a meaningful way national projections of demands for timber, recreation, water, and other resources to the many different situations in which these commodities or services are produced. This has proven to be a difficult part of the Assessment.

Lack of adequate data causes a substantial part of the problem in developing adequate analytical frameworks for projected future demands and supplies. The information base for describing current uses and resource conditions and for relating these to possible future determinants is, at best, weak.

The Forest Service estimates the timber inventory and growing conditions state by state at about 10-year intervals. There is, however, no comparable data base for the other resources and uses, although there has been some improvement recently.

Additionally, data that describe the interrelationships among resources and uses on any category of forests and rangelands are practically nonexistent. The Forest Service is faced with making judgments about resources, their uses, and their interrelationships in a partial information vacuum. For example, there is relatively

little information on the effect of timber management practices on songbirds. Yet, for many people, songbirds are an important forest resource.

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Summary

The Forest Service, as described above, faces serious limitations in its ability to assess forest and range conditions and uses as the basis for formulating a proposed Program. Inadequate data and limitations in the state-of-the-art for projecting behavior contribute in large measure to the problem. But even without these limitations, the Forest Service would be constrained, as it is, by the institutional setting within which the Assessment and Program are prepared and presented.

Understanding how these constraints affect what is presented in the Assessment and Program documents is important to understanding the following critique of the Assessment and the Program. Passage of RPA has heightened, perhaps unduly, the expectations in some quarters for the performance of the Forest Service in carrying out its various legislative mandates. The documents make it clear, however, that there are still certain basic limitations on the Forest Service. Performance must be judged in light of these limitations.

III. THE PERFORMANCE

The Forest Service is directly responsible only for management of the National Forest System (some 190 million acres of the total 1.7 billion acres of forests and rangeland and associated inland waters), for cooperation with the states in providing technical and financial assistance to owners of private forest lands, and for the nation's largest forest and range research program. Thus, the Program, however well it may be prepared and supported, can only deal with a portion of the problems identified in the Assessment.

The following critique emphasizes the relationship between the Assessment and Program documents, and the Program as a plan for future Forest Service activities. The performance critieria used here are judgemental. The question to be answered is, "How good, within the institutional,

data and analytical constraints identified above, are the identification of problems in the Assessment and the responses to these problems in the Program?"

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The Assessment

Section 3 of RPA requires that the Assessment be an "analysis of present and anticipated uses, demand for, and supply of the renewable resources of forest, range, and other associated lands with consideration of the international resource situation, and an emphasis on pertinent supply and demand and price relationship trends." Within this framework, the Forest Service has compared future demands and uses with future availability of resources to identify problems.

Problems are summarized in the initial "highlights" section of the Assessment, along with other findings. Only one general problem is identified:

"projections show demands for forest and range products rising faster than supplies."

The basis for this conclusion is not as clear for some resources as for others. Following is a summary of the problems identified in each Assessment chapter.

Outdoor recreation and wilderness. The Assessment notes that, because of the lack of data, it was impossible to make long-run projections of the amounts of recreation opportunities that will be supplied in the future. The best that can be done is to project increases in demand for recreation activities, and it is noted that this provides "an indication of how much supplies will have to be increased if demands are to be met." For dispersed motorized and nonmotorized recreation, the report indicates that the potential supply of opportunities is "considerable." Parallel judgments are not made for developed, water-based, snow, and ice recreation.

Wildlife and fish. As with recreation, the lack of data prevented projections of future supplies of wildlife and fish. The Assessment notes, that increases in supplies of wildlife and fish sufficient to satisfy the projected levels of demand" and "just maintaining" present wildlife

and fish population levels will be difficult for many species. For fish, the Assessment notes that natural stocks are generally unable to meet fishing demands and, therefore, they must be supplemented by hatchery releases. Also, the past decline in salmon runs is ascribed in part to deterioration of spawning habitats. The conversion of forests and range to agriculture, the loss of wetlands and riparian zones, and the tendency of land management to lead to relatively homogeneous vegetation over significant areas are identified as the major problems relating to wildlife.

Range. The demand for rangelands for grazing domestic livestock is projected to increase much more rapidly than the supply of forage if current trends continue. The Assessment poses two alternative levels of increased management that could achieve a balance between supply and demand for range forage. Both levels would bring a significant increase in the cost of grazing and a level of grazing well below that projected on the basis of current trends. Of the two alternative management scenarios, the one that results in the higher level of range grazing use reflects little consideration for other uses that are made of rangelands, while the one that reflects multiple-use considerations results in lower projected grazing use although its satisfies other use requirements. The problems identified in this analysis are current low levels of investment in range improvements and conflicts with other uses of rangelands, especially with timber production and wildlife.

Timber. The analysis of timber is by far the most detailed in the Assessment. To summarize, projected timber demands are compared with projected supplies of timber under the assumption that current trends continue, including a relatively low rate of increase in the price of timber products. This part of the analysis shows future demands substantially outrunning future supplies.

Then, a comparison is made to show what would happen if investments were made in timber management to increase timber supplies to the point where projected demands (which would be lowered because of increased prices) and supplies were in balance. This analysis shows that the

increase in timber prices would be substantial. Impacts of rising timber prices on the forest products economy and on the environment are described, along with a description of investments that could be made to increase timber supplies. The major problems involved in making such investments, according to the Assessment, are the constraints that limit investment in timber production on small, private ownerships and the importance of uses of public forest lands that conflict with timber management. The latter is seen as particularly important on the National Forests, which by law must be managed for a variety of possible uses and on which demand for recreation and wildlife uses is high because of the basic attractiveness of much of the land and because these uses are provided at no or minimal cost to the user.

NOTES

Water. Projections of the demand for and supplies of water are taken from the U.S. Water Resources Council's 1975 Assessment of Water and Related Resources. That report studied water usage and available supplies region by region to identify those parts of the country that face possible water shortages. Watershed management on forests and rangelands is identified as one means, but only a minor one compared to conservation, to meet problems of potentially inadequate supplies. The impact of other uses of forests and rangelands on water quality is noted, but there appears to be a lack of information about the costs of actions to ameliorate potential problems and, therefore, about possible management responses.

Scientific information and data needs. Four major research areas are identified as important for future Assessments: inventories of forest and range resources, estimation of response to management practices, surveys of use, and techniques for collecting data needed for management. These do not, it should be noted, cover the whole range of possible research needs related to land management and are not the only ones that are covered in the Program.

The Assessment then reflects the institutional and data and analytical constraints under which it was prepared. Because of the emphasis of the 1928 McSweeney-McNary Act on analysis of the timber supply situation, the data for timber are much better than other forest and range land

resources, and the Forest Service had more experience analyzing the timber situation. Not only the quality of the timber chapter, but also the emphasis of the Assessment, demonstrate this.

Additionally, the institutional constraints under which the Assessment was prepared are evident in the way in which problems are identified and solutions examined. Although nominally the Assessment examines the situation for all forests and rangelands in the United States, the characterization of problems reflects the particular responsibilities of the Forest Service for the National Forest System, for technical and financial assistance to the states, and for forestry research. The Assessment is clearly intended to be used in examining -- and justifying -- Forest Service programs. It will serve other valuable purposes as well, but its usefulness is constrained somewhat by its focus on Forest Service responsibilities.

Given these constraints and with full recognition of the serious limitations they placed on the Forest Service, there are still three major shortcomings of the Assessment within the framework that it sets:

- lack of a real summary of problems that were identified and establishment of some priorities among them;
- lack of an overall analytical framework and, therefore, uneven treatment of the various resources or uses;
- failure to treat in a substantial way the fact that the various resources and uses are intermixed in a variety of ways on forests and rangelands and to deal analytically with the interactions among them, such as the effect of wildlife habitat improvement on future timber supplies.

All three of these shortcomings could have been overcome within the constraints under which the Forest Service operated. In particular, setting up and using a consistent analytical framework throughout the report would have pointed up in more meaningful terms the data limitations and the kind of work that must be done to improve the Assessment that will be required in 1990. It

would also have helped in setting some priorities among the problems that are mentioned throughout the report.

NOTES

Finally, this Assessment in a sense represents a "missed opportunity", though it is an opportunity which, if taken, might have created some problems for the Forest Service in dealing with its institutional framework, particularly with respect to Congress and the OMB. The 1979 Assessment views the use of forest and rangelands as being largely determined by economic and other forces external to the lands themselves. The posture of the Assessment, then, is that plans for use of these lands, and investments in them, must respond to these outside forces.

However, the Assessment could have been used to examine how forests and rangelands could affect development and change in the nation's economy and social and cultural life. There is some basis for arguing that disputes over the use of these lands in recent years have resulted in public policy stalemate. Using the Assessment to change the agenda for discussion of these issues or to change the terms of the public policy dialogue might have been a way to break the stalemate, even at the expense of departing from the way in which regular reviews of the timber situation were done in the past.

For example, the disposal of public lands through the Homestead Act and the creation of the National Forest System were actions intended to shape the country's development. The proposal in a 1977 Conservation Foundation book, The Lands Nobody Wanted: Policy for National Forests in the Eastern United States, to use the National Forests in the eastern United States as places of relatively natural and conservatively managed forests in the midst of otherwise developed lands, was aimed at shaping the overall landscape of the East. Earlier Forest Service efforts to establish cooperative, public-private, sustained yield management units were attempts to improve timber management through collaborative efforts with private industry. The thrust of these kinds of initiatives is broader than anything that appears in this Assessment. Analysis may well show that such actions would be unsuccessful or unwarranted. On the other hand, examination of such actions would be in keeping with the spirit of innovation that marked earlier Forest Service activities.

The Program

The 1980 Program was a surprise, and disappointment, to those who wanted a Forest Service statement of program needs for the next five years. After much delay, the 1980 Program, when it finally emerged, presented a range of program levels, rather than a single standard, against which the President's budget requests and Congresses' appropriations are to be judged. The very inconclusiveness of the Program seemed to flaunt congressional intent in the 1974 Resources Planning Act.

In concept, the Program presents unvarnished professional judgments of programs needed to correct problems identified in the Assessment. But, as a statement of what a national administration believes are the appropriate activities and budget levels for the Forest Service, the Program is inevitably a political document. It expresses the concerns of an administration for forest and range programs, but in the context of its overall concerns for social needs. Thus, the Program is pulled in two directions. On one side, it must satisfy a professional sense of proper relationship to the Assessment, which will almost surely be cast in a way that points to increased programs. On the other side, it must be consistent with the administration's overall budget and priorities, which at least for the early 1980's will almost surely emphasize holding discretionary federal expenditures to a minimum.

The high and low bounds of the 1980 Program express this dichotomy graphically. The high bound approximates what the Forest Service believes is a reasonable extension of current program levels. The low bound is consistent with the Carter administration's stated desire to balance the federal budget. The 1980 Program leaves it to Congress or others to reach a compromise somewhere between the bounds.

The unwillingness of the Carter administration to make the 1980 Program public with anything that would hint that budget increases were in the offing, combined with its inability to say "no" to Forest Service pleas for increased programs, delayed release of the Program to June, 1980, some five months after it was due. Even then, it took threats from Congress to get it released.

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It was the Senate Subcommittee on Environment, Soil Conservation, and Forestry, of the Senate Agriculture Committee, that demanded, and got, release of the 1980 Program. The Subcommittee and its chairman, Senator Melcher, were not happy with what they got.

NOTES

Congressional disappointment in the Program focused on the lack of a definitive statement of the Program. The purpose of the RPA legislation in the first place was to force a statement of program needs out of the executive branch. What Congress got was a statement that said, in effect, "We intend to make our case for Forest Service programs in the annual budget!" The Subcommittee responded with a "white paper" on the proposed 1980 Program that hit hard at the lack of targets for future action. The White Paper also made it clear that timber supply was the Subcommittee's main interest. It portrayed the Program's plans for nonindustrial private forests as inadequate to meet the needs identified in the Assessment. It also was particularly critical of the Program's lack of attention to timber supplies in a global context and the assumption that the United States can rely on Canadian or other foreign sources for increased imports of forest products.

In the end, it was the Congress as a whole that took action by revising the President's policy statement that accompanied the 1980 Program. It did so in the Appropriations Act for the Department of the Interior and related agencies. In a terse two-page statement that struck at the very notion of a high and low bound, Congress accepted the "high bound" as the Program and even noted that it may not be sufficiently high in several respects to accomplish the goals set out in the congressional statement.

In particular, Congress set goals of minimizing the inflationary impacts of rising timber prices and having the United States become a net exporter of forest products by 2030 (from its current position as a substantial net importer of lumber, woodpulp, and paper, largely from Canada). To do this, Congress set an objective of reaching 90 percent of the land's potential timber growth on all commercial forest lands by 2030.

Here is a clear statement of what the 96th Congress believed necessary for the Program. But its likely impact is still clouded. With a new

President and a new Congress pledging to cut the domestic budget, one may well ask what importance can be attached to this policy statement, passed as it was in the final days of a Congress that was pointed in a much different direction than its successor.

Though frustrating to those who supported the RPA legislation and believed it would lead to larger and more evenly balanced Forest Service activities, the 1980 Program can still be judged as a long-term planning document. Does it respond to the problems identified in the Assessment and is it of use as a plan for Forest Service activities?

A Response to the Assessment. The Assessment identifies future shortages (relative to projected demands for all forest and range resources and uses) as the major forest and range problem to which the Program should respond. A plethora of sub-problems are also identified, although no priorities are assigned among them. Thus, practically any response in the Program can be viewed as meeting problems identified somewhere in the Assessment, although the exact lineage may not always be readily apparent.

The chief issues in the Program are the relative emphasis on timber and other often conflicting uses of the National Forests, and the relative weight to be assigned to programs for timber production on the National Forests and programs for encouraging timber production on nonindustrial private forestlands. The Carter Administration was somewhat ambivalent on these issues. It generally supported weighing the National Forest scales more heavily in favor of recreation and wildlife. At the same time, it attempted to increase near-term timber cutting on the National Forests by ordering the Forest Service to identify areas where departures from even-flow could be allowed.*

While timber production programs aimed at the mostly small nonindustrial private forests appear to many to be relatively ineffective, the

* For a fuller discussion of the issue, see the paper *Regional and National Forest Planning*.

Assessment points out that the area of these lands is large and potential productivity is relatively high. In addition, most of the long-term investments are borne by the landowner, rather than the federal government. Thus, timber production programs for these land have relatively small effects on the federal budget. These considerations are important ones in view of the continuing attention given to holding down spending in the national budget.

NOTES

Although the Assessment characterizes the major forest and rangeland problem as one of inadequate supplies to meet projected demands, there are other matters at which the analysis is directed. For example, the Assessment document indicates that there are problems associated with declining quality of hardwoods for timber, and the loss of wetlands. Similarly, the lack of markets or other rationing mechanisms for limiting use and guiding investments for nonmarket or amenity uses are noted. The choice of one of these emphases as a major problem focus of the Assessment would have led to a much different description of alternative Program directions.

As noted earlier, the Program document identifies 14 issues that were raised during preparation of the Assessment and Program and that are "of concern to the Congress and the general public." As discussed as part of the recommended Program, these issues include several major policy concerns facing the nation in use of forest and range lands. These issues can be tied back to the Assessment. For example, production of wood from private nonindustrial forest lands and increasing softwood products from National Forest System lands, the first two of the fourteen issues, are clearly identified as important concerns in the Assessment. Although the discussion of each issue is brief and there is no mention of the Assessment, data to support the characterization of the issue's importance can be found -- with a great deal of digging -- in the Assessment.

Other issues are perhaps equally important, but have almost no relevance to the Assessment's findings. For example, pesticide use, and alternative means for financing capital development on National Forest System lands, the sixth and eighth issues on the list, could be tied to findings in the Assessment only with considerable

difficulty. The pesticide issue is clearly of importance to the public at large, and its resolution will have major impacts on timber management. Data were not presented in the Assessment, however, to show the effects of alternative answers to the issue.

The relationship of the policy issues to the Program is perplexing. The discussion in the Program under some of the issues included decisions on specific Forest Service activities. One example is the decision "to develop and implement a marketing information and timber price reporting system." This is presented as part of the response to the issue, "production of wood from private nonindustrial forest lands." Again, there is nothing in the Assessment that suggests the degree to which this proposed activity would increase timber production.

In sum, analysis of alternative program directions appears to bear little particular relation to the Assessment document and its findings, although support can be found in the Assessment for the major elements of each alternative. It is equally true that other alternatives with different emphases on National Forests and private forestlands could also be supported by the Assessment.

As a plan for the future. The Program is to be redone every five years. It presents a national plan for Forest Service activities, complete with budgets and personnel requirements. At one level, the Program deserves to be judged in terms of how well it presents the case to Congress for enlarging existing Forest Service programs, for this is the context within which Congress, at any rate, believes it is prepared. But there are at least two other contexts within which it should also be judged: first as an operational plan for the Forest Service in trying to cope with changing future conditions affecting forests and rangelands, which are set out, in part, in the Assessment; and second, as an indicative plan telling forest landowners and other interested parties what can be expected in the way of Forest Service programs over the next five years and upon which they can base their individual plans and commitments.

It is evident that the 1980 Program as sent to Congress by the Carter administration cannot be judged either as an operational plan or as an

indicative plan. The range between the high and low bounds has no meaning in either context. But the decision by the Congress to accept the "high bound" provides a meaningful basis for judging the Program in these two planning contexts.

As a document for internal Forest Service programming, the 1980 Program is a relatively inflexible tool. It is predicated on the basic assumptions of the Assessment with little consideration assigned to what would happen if these assumptions were varied. Although each of the alternatives traces out a series of management directions under the same set of assumed future conditions, and in this sense provides information on alternative futures, little attention is assigned to the possible effects of shifting program emphases from time to time.

As administrations change, program emphases also are likely to change. Future administrations are likely to have different views from the present ones, and while actual programs actually change rather slowly, some can be changed more readily and at lower cost. This seems to be an important oversight in the definition and evaluation of the alternatives in the draft Program.

Additionally, the Recommended Program has not withstood the test of on-the-ground feasibility. For the National Forests, a Recommended Program provides national goals, which then have to be interpreted for the individual National Forests. The same is true with respect to the production of timber and other resources on private and other non-National Forest lands. It must be recognized that the Program document cannot include all of the necessary analyses and describe all of the implications of the program for state-by-state or National Forest planning. It is prepared as a national program which must go through a translation at the regional level into field-level direction. This is an inherent limit on the usefulness of the Program as an internal planning document, although this might be rectified if succeeding Assessments and Programs are meshed well with regional and National Forest information and the state forestry programs prepared by state forestry agencies.

Finally, another way of viewing the Program is as a commitment to the public and to other forest and range owners that the Forest Service

will act in a defined way over some planning period. This "indicative planning" by government reduces uncertainty for others making decisions about their programs and investments. In view of the discussion of flexibility above and of the role of the Program in the budget process, it is apparent that the Recommended Program represents something less than a commitment of the federal government. It should not be viewed as an indicative plan.

NOTES

The role of government programs in what is basically a market economy will almost surely continue to be subject to political debate and policy changes. Therefore, it is unlikely that successive RPA Programs will be marked by consistency or that they will be accepted as commitments over long periods. On the other hand, investments in timber production and other resource management on forests and rangelands are peculiarly long-lived. This suggests the need for more thought to be given to RPA Programs as indicative plans.

In sum, the 1980 Program and its likely successors fail in number of ways to meet planning ideals. Translating the Program into meaningful actions at the local level that contribute to satisfying national goals will be difficult. Locally defined limits on what can be done with forests and rangelands are not yet adequately reflected in the national Program.

The Forest Service is well aware of most of the inadequacies of the 1980 documents. To help improve the 1985 Program, there was a detailed in-service review of the process and results of the 1980 effort. In addition, the Forest Service has encouraged outside critiques and help, including symposia at Duke University and Dartmouth College, and programs sponsored by the American Forestry Association and The Conservation Foundation. It is this commitment to improvement that is perhaps the most helpful signpost on the RPA road.

REGIONAL AND NATIONAL FOREST PLANNING

By William E. Shands

INTRODUCTION

With the extensive 1976 National Forest Management Act (NFMA) amendments to the Resources Planning Act (RPA), Congress stamped its imprimatur on what was already a long-range and comprehensive process for planning and management of the 190 million acre National Forest System. The original Resources Planning Act made only passing mention of Forest Service planning for the National Forests and Grasslands. In the NFMA amendments, which became Section 6 of RPA, Congress firmly bonded National Forest planning to the RPA Assessment and Program, directed how planning was to be conducted, and established standards and guidelines for resource management.

National Forest planning was described briefly in the overview paper of this series in the context of the entire RPA. This paper looks at how planning for the National Forests and Grasslands is to be conducted. The paper should be read in conjunction with two others in this series, series, "Public Participation" and "Forest Service Coordination with States and Local Governments," since these are important elements in regional and National Forest planning.

RPA is aimed at resolving issues of substance: the appropriate role for each National Forest, the amount of goods and services--particularly timber, forage, recreation, water, wilderness--that the National Forests are to provide, the silvicultural systems to be used, and the size and dispersal of clear-cuts, to name but a few.

But RPA also raises issues of process--that is, how decisions are to be made. Process is the framework for substantive decision-making. This paper emphasizes process, in the belief that an understanding of process will enable individuals to contribute effectively to decisions of substance.

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Enactment of RPA and the NFMA amendments was only a first step. Specific direction had to be given to Forest Service officials through regulations required by the Act. In September of 1979, the Forest Service published its regulations to implement the forest planning process. These complex regulations present in detail the process for developing regional and forest plans and describe decision and information flows among administrative levels.

Persons working at regional or forest levels should have a good grasp of the regulations, particularly a mastery of the relationships between various sections. This paper is intended to serve as a guide to the regulations, making a careful reading of them as easy as possible. The seven-member Committee of Scientists which helped the Forest Service prepare the regulations said in its report, "the regulations are a complex, finely-tuned document. Many requirements cannot be understood without reading several sections and observing the relationships between requirements in the several sections."

NATIONAL FOREST PLANNING: AN OVERVIEW

The planning process is three-tiered: it includes the RPA Assessment and Program, plans for each of the nine Forest Service administrative regions, and plans for each of the more than 150 National Forests and Grasslands in the National Forest System.* (See map, following page.) All three planning levels are linked; regional and forest plans are not to be developed independently of the RPA Program or each other.

The RPA Assessment and Program define the national context for administration of the National Forests. Together they estimate the productive capabilities for all of the nation's forest and rangeland, determine the appropriate role for the National Forests and Grasslands, set quantitative objectives for them, and identify opportunities for other forest and range ownerships.

* Complementary plans also are prepared by the Forest Service's State and Private Forestry and Research arms; these are described in other papers in this series.

NATIONAL FOREST SYSTEM

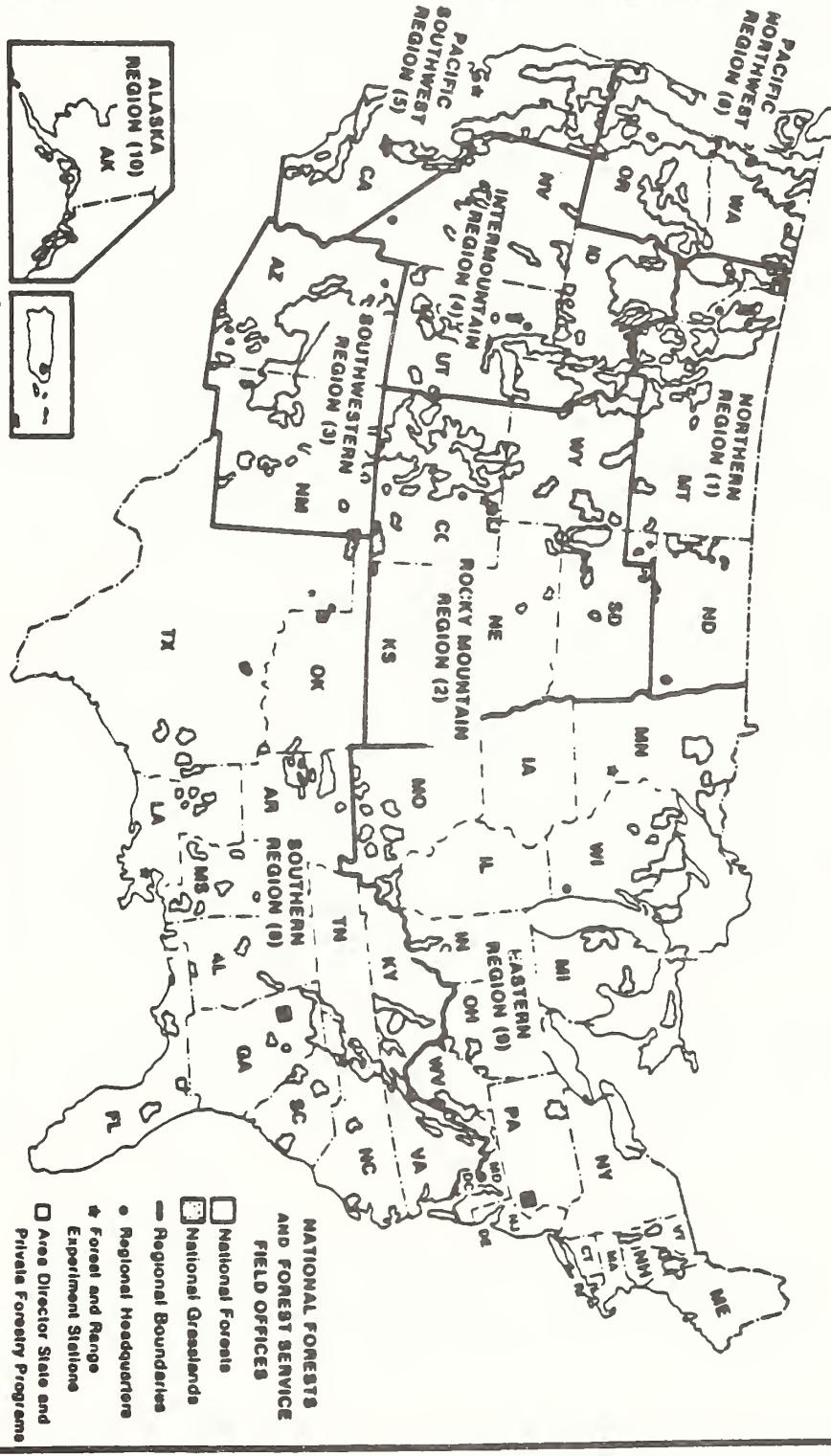
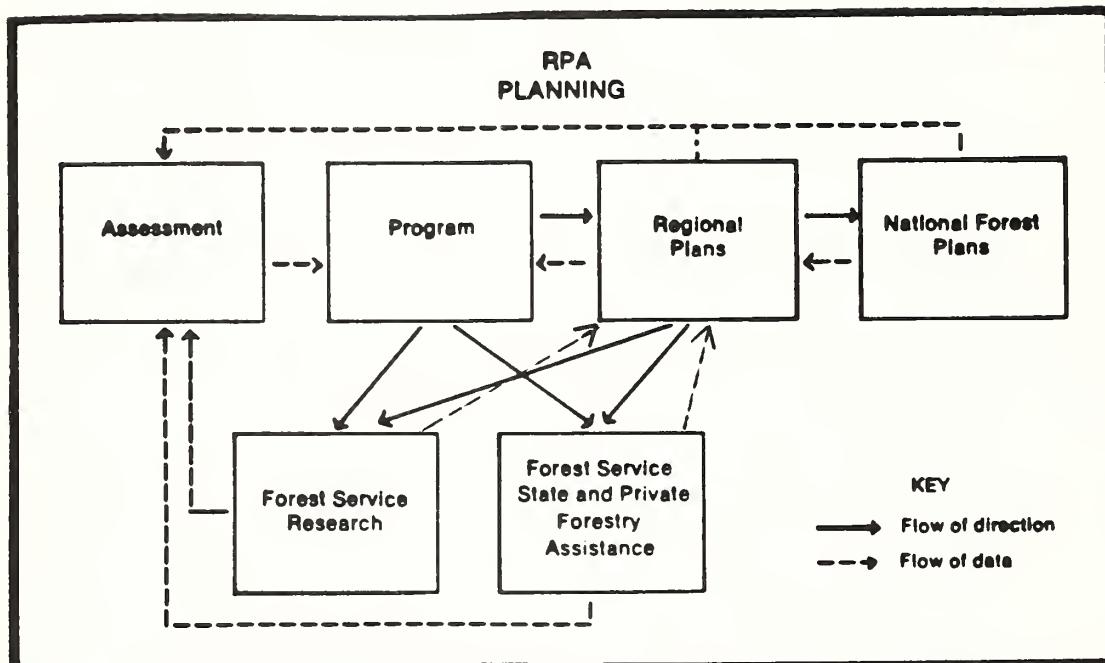


FIGURE 1
ELEMENTS OF RPA



Regional planning, in the context of RPA, is a new kind of Forest Service planning. Regional planning is to link the national Assessment and Program with individual forest plans as well as the activities of State and Private Forestry and Research in the region.

NOTES

When the National RPA Recommended Programs is complete, the Chief allocates to each regional unit a share of the National Program in terms of output targets and associated costs. With this national direction in hand, the Regional Plan is to do three things:

1. Display the regional RPA Program along, with its distribution among the regions national forests and describe State and Private Forestry and Research programs in the region;
2. Provide planning direction for developing forest plans, including the range of management alternatives to be considered. Planning direction may also result from the identification of regional issues which would be affected by land management decisions.
3. Set forth standards and guidelines for the management of national forests in the region as required by Section 6 of

the National Forest Management Act of 1976 and the implementing Regulations.

The regional plan will discuss alternative standards and guidelines; these standards and guidelines will be the sole subject discussed in the environmental impact statement on the regional plan. The regional standards and guidelines will address some of the thorniest issues of National Forest timber management [Sec. 219.10 (d)(1)-(7)].* These issues include silvicultural systems (even-aged or uneven-aged management), the size of clear-cuts, the establishment of biological growth potential criteria to be used in the identification of lands unsuited to timber production, and standards for management intensity.** Regional plans also are to establish standards for power transmission mission lines and other transportation corridors through the forests and determine the use of available air quality increments (that is, permissible levels of air quality degradation from, for example, controlled burning).

National Forest plans are the documents that provide direction "on the ground." The forest is the basic planning unit. Much of the RPA Program and the regional plans is aimed at providing direction that will be reflected in plans for each National Forest and Grassland. But the forest plans also are to identify and address particularly local problems and discuss management alternatives. A forest plan, then, will guide National Forest management--for timber production, recreation, wilderness, wildlife habitat improvement, and other activities.

Thus, the directional flow is downward--from the national level, to the regions, to individual forests. However, there is a complementary upward flow of information on forest resources and

* Throughout this paper, we will reference the specific sections of the regulations being discussed. The regulations are included in this Guide as Appendix B.

** Readers will find the Forest Service's definition of many of the technical terms used in this paper in the glossary, Appendix A.

productive capability on which direction is to be based. The data originate on the National Forests, which have been divided into "capability areas" according to ecological characteristics of parcels of land. These "capability areas" are the basic units for the supply of data upward through the system. (Later, as the National Forest plan is developed, capability areas will be consolidated into management areas.)

NOTES

Data from the forests in a region are analyzed by the regional forester and his staff, aggregated into regional totals, and transmitted to the Washington office for use in developing the Assessment and Program. At each level there is a back and forth push and pull between direction and information.

This flow of information and direction is described in the regulations. The national Program is to assign "a portion of each national goal and objective" to each region, but the objectives must be based on "local supply capabilities and market conditions," with economic efficiency and environmental impacts also taken into account.

Each regional plan is to allocate regional objectives among forests, but these are to be based on, among other things, individual forest "supply capabilities, socio-economic assessments, potential environmental effects, economic efficiency criteria, and community stability objectives."

The National Forest plans are to "address the goals and objectives established by the regional plan," but these objectives are to be "compatible with local supply and demand, economic efficiency, community stability, and potential environmental effects."

The reconciliation of RPA Program, regional, and forest objectives with forest capability involves negotiation between the Chief of the Forest Service, at the top of the hierarchy, and the nine regional foresters, and between each regional forester and his forest supervisors.

RESOLVING ISSUES

It is at the regional and National Forest levels (that is, the second and third tiers) that

the issues-resolution objective of planning becomes most apparent. Spurred by the 1978 changes in the Council on Environmental Quality's regulations for the preparation of environmental impact statements, which require that major issues be identified early in the EIS Process (this is termed "scoping" in the CEQ regulations), the Forest Service has made issues identification one of the early steps in the development of both regional and forest plans. A discerning reader of the regulations will see that the planning process is concerned with resolution of those issues through development of alternatives, analysis of options, solicitation of public comment, and, finally, the rendering of a decision that, it is hoped, resolves the major issues in ways that, if not totally satisfactory to all interests, are at least acceptable to most of them.

Issues can be identified at the national level and then passed down to the regions and forests for resolution. Conversely, issues can be identified at the forest or regional levels and, if unresolvable, be passed upward to where they could ultimately be identified as an issue of national significance to be addressed in the Program.

Before the regulations are considered, two points should be emphasized:

-- The regulations are the extension of the law; deviation from them is, technically, a violation of the law and is actionable;

-- Only in a few instances are the standards specific, and even then exceptions are provided for. For example, even the presumably strict limits on the maximum sizes of clear-cuts [Sec. 219.13(d)(2)] are followed by provisions permitting the regional forester to provide for larger cuts under certain circumstances, or to set maximum size limits lower than those of the regulations.

GUIDES TO THE REGULATIONS

The environmental impact statement for regulations is a good introduction to them. It identifies 11 "central or primary issues" addressed by the regulations, describes each one briefly

(pages 53938, 53939),* and then proceeds to analyze each on the basis of alternative language suggested by the Committee of Scientists, environmental groups, the timber industry, and the Forest Service (pages 53943-53949). After the discussion of each issue and alternative proposals, the Forest Service explains its decision, providing useful insights into how it arrived at it, the source of the language, and its implications.

NOTES

The EIS's comprehensive outline of the regulations and an index appended to the EIS by the Forest Service (included in Appendix B) are invaluable guides to the regulations and will help the reader locate quickly the sections dealing with an issue or a point in the process. The index is particularly useful for identifying procedures or administrative level of responsibility. A look at "regional planning procedure" in the index, for example, shows that, among other things, the regional plan is to establish standards and guidelines for silvicultural systems, and size of tree openings under even-aged management and is to evaluate biological growth potential.

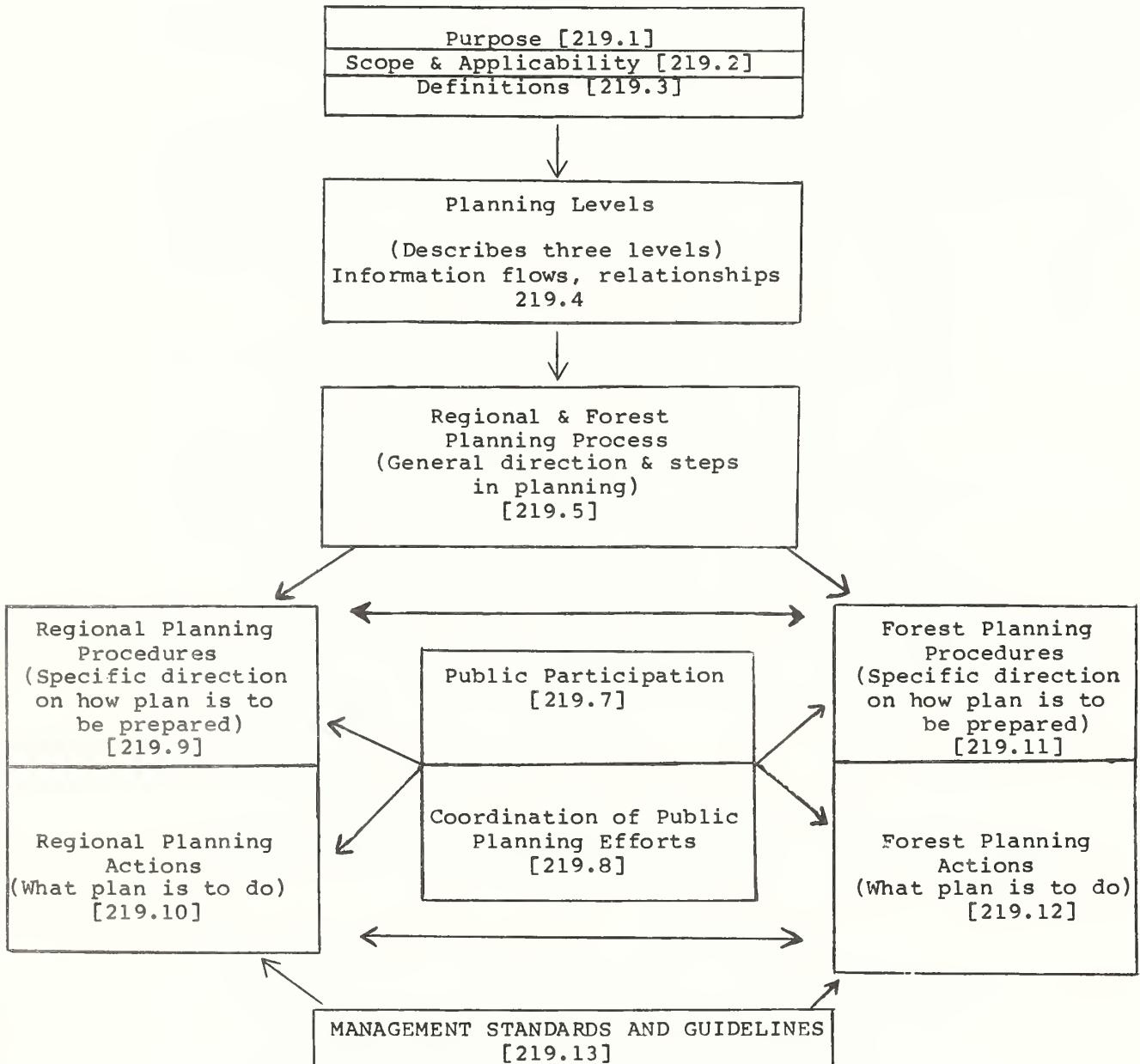
ORGANIZATION OF THE REGULATIONS

The regulations can be divided into (1) introduction, (2) process, and (3) guidelines and standards. The major sections and their relationships are shown in Figure 2.

The introduction consists of the Purpose of the regulations [Sec. 219.1], Scope and Applicability [Sec. 219.2], and Definitions. The Purpose is important because it sets forth the philosophic base for National Forest System planning. Although the Purpose reflects the language of the Resources Planning Act, the wording of the regulations is more straightforward and understandable. The Scope and Applicability section, for example, makes it clear that special areas, such as wilderness, wild and scenic rivers, and components of the national trails system will be covered by resource management planning. The Definitions give the legal meaning of key words

* These are the page numbers of the Federal Register reprint of the regulations; see Appendix C.

FIGURE 2
ORGANIZATION OF THE REGULATIONS
AND RELATIONSHIPS BETWEEN SECTIONS



and terms used in the regulations and also establish a common vocabulary so that all readers understand the meanings of technical terms.

The bulk of the regulations--nine sections, from Planning Levels [Sec. 219.4] to Forest Planning Actions [Sec. 219.12]--detail the process for planning. However, only six of these sections describe process steps. Two--Public Participation and Coordination of Public Planning Efforts--detail procedures for access to the process by outside parties. (As noted earlier, these two sections are covered comprehensively by two other papers in this series.) The remaining section describes the interdisciplinary approach to planning [219.6], and, because it is intended to pervade the planning process, it warrants examination before turning to process.

INTERDISCIPLINARY PLANNING

The requirement that Forest Service planning be truly interdisciplinary, that is, that National Forest planning reflect different disciplines and skills, was one of the major "reforms" of the National Forest Management Act (though its regions can be traced back to NEPA). The Act directs that a "systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences" be used in the development of forest land management plans "to insure coordinated planning which addresses outdoor recreation, range, timber, wildlife and fish, and wilderness opportunities." [219.6] The interdisciplinary approach has been tightly woven into the process at the regional and forest levels, reinforcing the Act's mandate for planning that integrates all resources.

Regional and National Forest plans are to be prepared by "interdisciplinary teams." A team is to represent "several" disciplines; it is to be composed of people "who collectively represent diverse specialized areas of professional knowledge about natural resource management applicable to the area being planned." (The team might also include economists, social scientists, or others with expertise outside traditional resource management disciplines.) These individuals are to have a minimum of a bachelor's degree in a relevant discipline or "recognized expertise." Public participants in planning will want to look closely

at the composition of the team to be sure that it contains experts in the significant resources of a forest or region.

NOTES

The regulations also list other attributes team members should possess including the ability to solve complex problems and skills in "communication and group interaction."

The team is to consider problems collectively--an attempt to discourage tendencies to defend a particular disciplinary turf. This discouragement will be essential if the team is to fulfill one of its responsibilities: providing higher-ups with "an integrated perspective."

The final portion of the regulations set forth guidelines and standards for management of the National Forest system. Regional and forest planning must be considered in the context of management standards and guidelines required by the Resources Planning Act (as amended by the National Forest Management Act). They include requirements for maintaining wildlife populations and diversity of tree and wildlife species, protection of riparian zones, and for timber management. These standards and guidelines constrain the regional and forest plans. In the regulations, the Forest Service chose to place the standards and guidelines section after the sections on planning. We have done the same in this paper.

PROCESS

The regulations divide planning into process, procedures, and actions, moving from the general to specific detailed direction at the forest level.

Presenting a program of systematic, comprehensive analysis, the planning process consists of 10 steps, beginning with issue identification and concluding with monitoring and evaluation. The process is intended to comply with the requirements of NEPA and CEQ's 1979 regulations. While the regulations describe the ten steps sequentially, they are all closely related and frequently will overlap temporally. The 10 activities can be grouped into four activity categories: analysis, alternatives, decisions, and implementation. These activities are shown schematically in Figure 3.

FIGURE 3

Flowchart of the Forest Planning Process

(From the USDA Forest Service)

ANALYSIS	ALTERNATIVES	DECISION	IMPLEMENTATION
Analysis is made for preparing of alternative plans	Alternative plans are created and evaluated.	An alternative plan is chosen.	The implemented plan is monitored and results/affects evaluated.
(1) Identification of Issues, Concerns and Opportunities	(5) Formulation of Alternatives	(8) Selection of Alternatives	(9) Plan Implementation
(2) Planning Criteria	(6) Estimated Effects of Alternatives		(10) Monitoring and Evaluation
(3) Data & Information Collection/Compilation	(7) Evaluation of Alternatives		
(4) Analysis of the Management Situation			
Analysis is made to determine the need for alternatives.	A Draft Environmental Impact Statement results (i.e., a preferred alternative is chosen).	Environmental Impact Statement results from this decision (with a forest plan).	

First, the interdisciplinary team is to identify "issues, management concerns, and resource use and development opportunities." Some of these will be brought to the team's attention by the public or by state and local governments. The regional forester or forest supervisor is to determine which issues will be dealt with in the plan.

Next, the team is to establish planning criteria, or, more simply, standards for planning. Some criteria deal with the process of decision making; others, with standards to be used to evaluate alternatives (termed "decision" or "evaluation" criteria). Process criteria may deal with such things as data to be collected, or analysis of public comments. Decision criteria will provide the basis for selection of the preferred alternative. Criteria* are to be based on laws, executive orders and Forest Service policy; the RPA Program--and for forest plans, the regional plan; recommendations and assumptions (with public participation) developed during issues identification; plans and programs of other federal agencies, state and local governments, and Indian tribes; ecological, technical, and economic factors; Forest Service guidelines on economic analysis; the regulations' management standards and guidelines.

The third step is data collection. The regional forester or forest supervisor is charged with assuring that the team has the best data available, although the regulations do not specify what constitutes adequate data.

This is an important point when data quality varies among resources. (It is likely, for example, that there will be much better data on timber than, say, wildlife.) The regional forester or forest supervisor may order special studies and inventories as needed. Further, the data are to be gathered and maintained in a way that is useful for plan monitoring and evaluation.

* In this and other citings of regulation requirements, we have tried to maintain the language of the regulations. However, in some cases words have been added or unnecessary language eliminated for the sake of clarity.

Next comes analysis of the management situation. This, in the language of the regulations, examines "the ability of the planning area covered by the regional or forest plan to supply goods and services in response to society's demand...." The analysis of the management situation is to look at five items: (1) ranges of goods and services feasible at various levels of management intensity; (2) demand projections; (3) potential for resolution of issues and management concerns through Forest Service action; (4) the technical, economic, and environmental feasibility of meeting goals and objectives of the Program (for regional or National Forest plans); and, (5) on the basis of the analysis, the need to change direction.

The team is then to develop alternative courses of action that reflect a range of output levels. (As noted earlier, the Forest Service intends that the regional plans' alternatives deal only with standards and guidelines.) The regulations set forth explicit criteria for these alternatives:

- each alternative will be achievable;
- a no-action alternative will be included (no action is defined by the Forest Service as "the most likely condition expected to exist in the future if there is no change in direction of management.")*
- each alternative will provide for the orderly elimination of backlogs of work needed for resource restoration. To accomplish the alternative's objectives;
- each public issue or management concern will be addressed by at least one of the alternatives;
- each alternative will seek to be cost-efficient, which the Forest Service defines as "a competitive measure of economic efficiency determined by

* Forest Service Manual, Interim Directive No. 8, Chapter 1920--Land and Resource Management Planning, February 10, 1981.

maximizing the net present worth of an alternative, subject to meeting the objectives of an alternative."*

NOTES

Each alternative is to state, at a minimum, the condition and uses that will result in the long term; goods and services to be produced, and when; resource management standards and guidelines; and the purpose of the proposed management direction.

For the Forest Plan, alternatives are to be developed using a computerized Forest Planning Model called FORPLAN. This complex linear program, according to the Forest Service, permits the simultaneous evaluation of the major resources of the forest "so that relative impacts and interactions can be depicted and evaluated".** FORPLAN will be a major tool used to calculate the amount of timber to be harvested each year (in plan terminology, the selected harvest schedule). (See page 81)

The next step is the analysis of the estimated effects of each alternative. The alternatives identified in the previous step are examined in detail. The interdisciplinary team is to "estimate and display the physical, biological, economic, and social effects" of each alternative. The team is also to measure how each alternative responds to the portion of RPA goals assigned to the region or forest. This is the environmental and economic analysis required by NEPA.

The evaluation is to include, for example, a description of "the relationship between local, short-term uses" of forest and range resources, and the "maintenance and enhancement of long-term productivity," identification of irreversible and irretrievable resource commitments, an analysis of effects on prime farmlands, wetlands and floodplains, and of effects on minority groups and civil rights, among other things. Each alternative is also to be subjected to rigorous economic analysis.

* Ibid.

** Forest Service Manual, Interim Directive No. 68, Chapter 2410--Timber Management Planning, Dec. 5, 1980. Sec. 2413.36a.

Following this analysis, the alternatives are to be evaluated on the basis of "significant physical, biological, social, economic and environmental design effects."

Then the regional forester or forest supervisor is to examine the team's analysis and recommend a preferred alternative or alternatives. This is all bundled into a draft environmental impact statement and sent out for public review.

The next step is the selection of the alternative to be described in the final EIS. Public comments on the draft EIS are to weigh heavily in the selection of the alternative.

The alternative is then to be implemented. The regional forester or forest supervisor is to make sure that annual work plans and budgets conform to the plan.

The final step is ongoing monitoring and evaluation of the plan's implementation. The plan is to contain a description of how it is to be monitored. Monitoring and evaluation should reveal whether the plan is being carried out, whether it is having its intended effect, and whether changes in the plan are needed.

Management practices are also to be evaluated to see "how closely management standards and guidelines have been applied."

From process, the regulations move to planning procedures and planning actions, with sections on each for both regional [219.9 and 219.10] and forest levels [219.11 and 219.12]. The procedures sections provide more detail on how planning is to be done, including precise requirements for format and topic content.

The actions sections specify what the plans are to do. It is important that the reader have a feel for the rhythm and flow between regional procedures and actions and forest procedures and actions.

PLANNING PROCEDURES

Regional and forest planning procedures parallel one another. However, there are some important variations in responsibility and degree of detail. These similarities and differences are displayed on the following pages.

PLANNING PROCEDURES

SUBJECT	REGIONAL PLAN	FOREST PLAN
Purpose	To provide National Forests with goals and objectives, regional issues resolution and program coordination for National Forest System, State and Private Forestry, and Research. [Sec. 219.9 (a)]	No comparable section under Procedures but Planning Levels [Sec. 219.4(3)] specifies that National Forest will contribute to goals and objectives of the regional plan.
Responsibilities for plan preparation	Chief will establish agency policy for regional planning. [Sec. 219.9(b)] Regional forester will be responsible for directing development of plan, revision, and significant amendments; he also appoints and supervises interdisciplinary team. Regional interdisciplinary team will develop plan.	Forest Supervisor has overall responsibility for plan development and implementation and appoints and supervises interdisciplinary team. [Sec. 219.11(b)]
Environmental Impact Statement	EIS will be prepared on plan, revision, or significant amendments. [Sec. 219.9(b)(1)] Draft EIS must identify a preferred alternative. Plan will be based on this alternative. Draft statement plan to be available for public comment for at least 90 days. Final plan may be implemented 30 days after publication of	Forest interdisciplinary team will develop plan and implement public participation, coordinate activities with other agencies, monitor and evaluate planning results and recommend revisions or amendments. Same as regional plan. [Sec. 219.11(b)(2)(i)]

SUBJECT	REGIONAL PLAN	FOREST PLAN
	notice of filing EIS. Public participation activities to be held throughout the planning process.	
EIS Filing with Environmental Protection Agency	Final EIS to be filed with Environmental Protection Agency at least 30 days before implementation of any actions. [Sec. 219.9(b)(2)]	Same as regional plan. [Sec. 219.11(b)(2)(ii)]
Plan Approval	Chief will review plan and either approve it or return to regional forester for revision with written statement of reason for disapproval; Chief may recommend course of action to correct plan. [Sec. 219.9(c)]	Regional forester will review proposed plan and either approve it or disapprove and return it for revision, stating reasons for disapproval. [Sec. 219.11(c)]
		If forest plan proposes a timber harvest schedule for the 10-year planning period that is not the "base timber harvest schedule" (departure from nondeclining evenflow), the plan must be approved by the Chief [Sec. 219.11 (c)(3)]
Record of Decision	A statement will be attached to EIS that will state decision, identify alternatives considered, specify selected alternative, identify and discuss all factors considered by Forest Service and describe how such factors affected decisions, describe actions taken to avoid or minimize environmental harm and, if actions not taken, explain why they were not. [Sec. 219.9c(1)-(v)]	Same as regional plan. [Sec. 219.11(c)(I)-(i)(v)]

SUBJECT	REGIONAL PLAN	FOREST PLAN
Appeal by Public	<p>Approval or disapproval of the plan is not subject to appeal. However, public can ask Chief to reconsider his decision of approval or disapproval. Request must be filed within 45 days of Chief's decision and must be accompanied by written statement giving reasons for request and factual information on which request is based. A written statement on the request will be made within 30 days.</p> <p>[Sec. 219.9(e)(3)(i)-(iii)]</p> <p>At the time of requesting reconsideration or prior to filing request, individual may request stay of decision by showing that implementation will result in irreversible harm or will have immediate direct and adverse effect on that individual.</p>	<p>National Forest plan may be appealed if appellant was involved in public participation phase and commented on the draft EIS relative to specific issue being raised. Provision is made also to allow anyone to appeal who can show good reason why he/she was unable to participate and has an interest that would be adversely affected by the decision.</p> <p>[Sec. 219.11(c)(4)(i)]</p>
Conformity with Plan)	<p>Regional forester will manage NFS lands in region in accordance with regional plan. State and private forestry programs will be coordinated with regional plan. Research station directors will use regional plan to identify research needs for NFS lands. Forest plans in region will be revised to conform to regional plan.</p> <p>[Sec. 219.9(d)]</p>	<p>Forest supervisor will assure that uses of forest lands are in conformity with plan. National Forest plans will be revised or amended to conform to the Regional Plan.</p> <p>[Sec. 219.11(d)]</p>
Budget Changes	<p>Differences between annual budget proposals and actual funding allocations may require the regional forester to make changes in program scheduling.</p> <p>[Sec. 219.9(d)]</p>	<p>Forest supervisor may change proposed scheduling of activity to respond to minor differences between planned annual budgets and appropriated funds. This is a plan amendment, but no EIS required unless multiple</p>

SUBJECT	REGIONAL PLAN	FOREST PLAN
Effect on National Forests	When regional plan is approved, each National Forest plan will be revised or amended as soon as practicable, to bring it into conformity with regional plan. [Sec. 219.9(d)]	use relationships are significantly affected [Sec. 219.11(d)]
Amendment	Regional forester must do an environmental analysis to determine significance of proposed amendment. If there will be a significant impact, the amendment process will follow same procedure as plan preparation. [Sec. 219.9(e)] If the impact will not be significant, the amendment can be implemented after public notice. The Regional plan will be reviewed for possible amendment in conjunction with development of Assessment and Program or whenever the funded and implemented program deviates significantly from the 5-year levels specified in the regional plan.	Forest supervisor may amend plan through an environmental analysis to determine significance of proposed amendment, or through plan preparation procedures. If the impact of the amendment will be significant, the amending procedure will follow same procedure as plan preparation. If environmental analysis shows amendment not significant it can be implemented 1 days after public notice [Sec. 219.11(e)]
Revision	Plan will be revised when regional forester determines by analysis of management situation that revision is necessary because conditions or public needs have changed significantly. Revision will be carried out under same requirements as plan preparation. [Sec. 219.9(f)]	National Forest plan must be revised at least every 10 years, or sooner if forest supervisor determines conditions or public needs have changed significantly. Interdisciplinary team, through monitoring and evaluation process, can recommend revision at any time.

SUBJECT	REGIONAL PLAN	FOREST PLAN
Revision (cont'd)		Forest Service to review conditions on land every 5 years to see if revision necessary. [Sec. 219.11(f)]
Planning Records	Regional forester and interdisciplinary team will maintain a decision record system to document plan development. [Sec. 219.9(g)]	Records that support analytical conclusions and alternative plans will be maintained. [Sec. 219.11(g)]
Regional Plan Content*	Regional plan to contain: (1) description of major issues and management concerns and their disposition; (2) summary of analysis of management situation; (3) description of management direction; (4) distribution of regional objectives to forests; (5) management standards and guidelines; (6) description of monitoring and evaluation necessary to determine and report achievements and effects; (7) references to information sources; (8) names of interdisciplinary team and qualifications. [Sec. 219.9(h)]	National Forest plan to contain: (1) description of major issues and management concerns and disposition; (2) summary of analysis of management situation; (3) long-range policies, goals, and objectives and specific management prescriptions; (4) management standards and guidelines; (5) monitoring and evaluation requirements; (6) reference to information sources; (7) list of ID team members and qualifications. [Sec. 219.11(h)]

* The Forest Service feels that regional and forest plans will be easier for the public to read and understand if material contained in the EIS is not unnecessarily repeated in the regional and forest plan documents. Planning Staff Director Charles R. Hartgraves says the Forest Service plans to propose changes in the plan content provisions of the regulations to eliminate from the regional and forest plans some material which will be in the EIS--specifically the description of major issues and management concerns and their disposition, information sources, and names and qualifications of the inter-disciplinary team.

SUBJECT	REGIONAL PLAN	FOREST PLAN
Monitoring and Evaluation	<p>The ID team establishes monitoring and evaluation standards. Monitoring and evaluation to include:</p> <ul style="list-style-type: none">(1) Management practices relating to regional or subregional programs.(2) State and private forestry programs.(3) Economic and social impacts.(4) Resource production or environmental impacts relating to areas more widespread than National Forests or states.(5) Research programs.(6) National Forest System programs. The regional plan also will establish the intervals at which management practices will be evaluated. Based on ID team's evaluation report, regional forester will make changes in management direction, or revise or amend plan.	<p>National Forest plan to describe monitoring activities as required by Planning Process section Sec. 219.5(k), which are repeated in Forest Plan Procedures [Sec. 219.11 (i)(1)]. The plan is to describe (1) activities, practices, and effects to be measured; (2) expected precision and reliability of results; (3) schedule for evaluation reports. Requirements for evaluation reports are also described in Sec. 219.11(i)(2).</p> <p>Based on evaluation report, ID team will recommend plan changes, if necessary, to the forest supervisor.</p>

REGIONAL AND FOREST PLANNING ACTIONS

NOTES

Regional and forest planning actions are interrelated, just as a regional plan and the region's forest plans are. Planning actions are constrained by the management standards and guidelines. An understanding of these interrelationships is essential. For example, Section 219.10--Regional Planning Actions--requires that each regional plan establish guidelines for the appropriate silvicultural system to be used within the region. Section 219.12--Forest Planning Actions--provides greater detail in this

respect. Thus, the vegetation management practices chosen for each vegetation type and circumstance will be defined in the National Forest plan with applicable standards and guidelines and the reasons for the choices. However, both the regional and the National Forest plan must conform to the standards and guidelines spelled out in section 219.13--Management Standards and Guidelines.

NOTES

Regional Planning Actions

The Regional Planning Actions section first lists a number of actions--applicable to forest plans, too--that also establish that part of the Regional Planning Actions section, reads as follows [Sec. 219.9(6)]:

In addition to public issues and management concerns identified through public participation and coordination, each regional plan will address issues and concerns referred from national or forest planning. Some management concerns that should be considered in regional and in forest planning are the needs to:

- (1) Provide goods and services efficiently;
- (2) Produce timber and wood fiber;
- (3) Manage and utilize range resources and improve range grazing;
- (4) Manage fire to improve and protect resources;
- (5) Protect resources from disease, pests and similar threats;
- (6) Enhance water quality and quantity, soil productivity, and restore watershed conditions;
- (7) Adjust landownership as needed to support resource management goals;
- (8) Provide various recreation options;
- (9) Maintain or improve fish and wildlife habitats;

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- (10) Improve critical and essential habitats of threatened or endangered plant and animal species;
- (11) Assess probabilities of mineral exploration and development for immediate and future needs, and consider non-renewable resources in the management of renewable natural resources;
- (12) Construct, operate, and maintain transportation facilities;
- (13) Identify, protect, and enhance visual quality;
- (14) Require transportation and power-line corridors to the extent practicable, to minimize adverse environmental impacts caused by the proliferation of separate rights-of-way;
- (15) Discover, manage, protect, and interpret cultural resources values which are qualified or may qualify for inclusion in the National Register of Historic Places;
- (16) Identify typical examples of important botanic, aquatic, and geologic types, and protect them through establishment of research natural areas; and
- (17) Provide for various wilderness management options.

Standards and guidelines for important aspects of timber management--both silvicultural and economic--also are to be set by the regional plans. These cover: appropriate silvicultural systems; maximum size, dispersal, and size variations of openings created in the use of clear-cutting or other even-aged management systems of silviculture; tree growth potential criteria for determining suitability for timber production; management intensity and utilization; determination of the unit measure to express mean annual increment of growth [Sec. 219.10(d)]. The

silvicultural standards imposed at the regional level are linked to standards and guidelines contained in a later section of the regulations.

NOTES

Regional plans also are to establish standards and guidelines for transportation corridors (which may traverse more than one forest) and assign air quality increments available within the region--that is, air pollution increases allowable under regional air quality maintenance plans--to national forest uses.

Forest Planning Actions

The section on forest planning actions [Sec. 219.12] is the longest section of the regulations. Overall, it sets forth the minimum requirements for forest plans. Since the forest plan is to provide detailed direction for on-the-ground management, this section is complex and often technical. Several careful readings may be required for a good understanding of what is required of a forest plan.

The major parts of the section stipulate that forest plans are to provide:

- Identification of lands suitable for timber production (and those unsuitable), including economic analysis [Sec. 219.12(b)].
- Determination of policy for timber management. [Sec. 219.12(c)]
- Timber harvest scheduling and departures from nondeclining evenflow [Sec. 219.12(d)].
- Evaluation of lands for wilderness designation, including development of wilderness criteria, and provision of direction for wilderness management. [Sec. 219.2(e)].

The remainder of 219.12 provides rather straightforward directions for planning for wildlife habitats, threatened and endangered species, grazing, recreation, minerals, water and soils, cultural resources, and research

natural areas.* It is impossible here to do a comprehensive analysis. The following outline should provide an idea of the section's organization and content. We also have described briefly some related substantive issues.

- Identification of lands suitable for timber production and harvesting [Sec. 219.12(b)(1)]. Criteria for suitability:

- the land has not been withdrawn from timber production either by Congress (i.e., wilderness) or by administrative action (research natural areas).
- biological growth potential equals or exceeds standards set by regional plan.
- technology will permit harvesting without "irreversible resource damage."
- there is reasonable assurance lands can be adequately restocked.

Issues:

These provisions essentially are a first screen to identify lands to be considered further for timber management. Lands that fail this first test are considered unsuitable. Those that pass will be subject to the economic analysis described below. Key issues associated with suitability criteria have to do with determination of growth potential, identification of potential environmental effects from timber management, and determination of whether the land can be reforested after harvest.

* Forest plans will vary in the attention given specific resources. A forest in the Pacific Northwest with high timber values and active markets will inevitably have more to say about timber management than, say, the Toiyabi in Nevada, where other values are more important.

● Economic analysis [SS 219.12.(b)(2)]:

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- lands which pass the first test and are tentatively deemed suitable for timber production will be examined to determine direct costs and benefits from timber production under a range of management intensities. The forest is to be "stratified into categories of land with similar management costs and returns." Direct benefits are defined as "expected gross receipts to government" based on "expected stumpage prices...considering the future supply and demand situation for timber production goals of the regional plan." Direct costs include "anticipated investments, maintenance, operating, and management costs" for timber production and cost of measures to mitigate impacts to other resources.
- cost and returns of managing existing timber--in addition to long-term potential yield--will also be considered.

Issues:

These actions are to establish through economic analysis the priorities for management of lands found to be suitable for timber production. Key issues include methods of determining costs and benefits, and where there are old-growth stands, establishing the cost of managing the old-growth inventory versus its accelerated removal and replacement with new stands.

● Formulation of management alternatives and determination of lands not suitable for timber production [Sec. 219.12(b)(3)]:

- evaluation of management alternatives will include "combinations of resource management practices" to meet various multiple-use objectives, including timber, recreation, watershed, range, wildlife, and wilderness. Evaluation will consider costs and benefits of alternative timber management intensities.

-- in preparing alternatives, lands are to be tentatively identified as not suitable for timber production if:

(1) the land is proposed for uses that preclude timber production, such as wilderness; (2) other management objectives limit timber production to the point where silvicultural standards and guidelines [219.13] cannot be met; or (3) in the time period of the management program (generally 50 years), corresponding to the RPA Program), the lands are not cost-efficient in meeting forest objectives, including timber production.

When the preferred alternative is selected, the lands that meet the above criteria will be identified as not suited for timber production and no timber harvesting will take place for the duration of the management program unless provided for in the forest plan in order to achieve other resource objectives. However, these lands will be examined "at least every 10 years to see if they have become suitable" [Sec. 219.13(i)(2)]

Issues:

These provisions constitute the final screen to identify those lands that will be designated as unsuitable. Basically, a number of alternatives that provide for various mixes of goods and services will be prepared and a preferred alternative selected; the lands will then be analyzed to see if the mix of uses makes timber management not cost-efficient (or, in the case an area proposed for wilderness, preclude timber harvesting). Key issues relate to the determination of the mix of uses to be considered and subsequent analysis of potential timber productivity given other use objectives.

● Vegetation Management [Sec. 219.12 (c)]:

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-- vegetation management--the methods, timing, and intensity of managing the vegetation--determines the goods and services to be produced. (Though usually thought of in terms of trees, understory shrubs and grasses can also be managed for wildlife or forage.) "Vegetation management practices chosen for each vegetation type and circumstance will be defined in the forest plan with applicable standards and guidelines and reasons for choices."

Issues:

Vegetation management involves the choice of the silvicultural system to be used--uneven-aged or even-aged management--on non-timber resources, particularly wildlife and range forage.

● Timber harvest scheduling--determination of allowable sale quantity and base harvest schedule [Sec. 219.12(d)]:

-- quantity will be based on principle of sustained yield and meet constraints of regulation's management standards and guidelines.

-- base harvest schedules require that "planned sale and harvest for any future decade be equal to or greater than the planned sale or harvest for the preceding decade...provided that the planned harvest is not greater than the long-term sustained-yield capacity and consistent with long-term management objectives."

Issues:

Timber harvest scheduling determines the amount of timber to be offered for sale each year over the term of the management program. While applicable to all the National Forests, this paragraph strikes at an issue of

greatest significance to the old-growth forests of Northern California, Washington, and Oregon. This is the issue of nondeclining evenflow, which, as defined by the Forest Service, means that throughout the process of converting old-growth stands to young stands, the annual timber yield should be set at a level "no higher than can be maintained from one decade to the next." A significant increase in cutting, the Forest Service contends, might result in a drop in timber yields at some point in the future, causing economic problems for communities dependent upon a steady supply of National Forest timber.

- Determination of long-term, sustained-yield capabilities, base harvest schedules, and departures (see below) will be based on guidelines that:
 - assume an intensity of management and degree of timber utilization consistent with the goals, assumptions and standards...in the (RPA) Program and regional plan.
 - ensure that harvest schedules will provide for a "forest structure" that will enable perpetual timber harvest at the long-term sustained-yield capacity and meet multiple use objectives of the forest plan.

Issues:

These guidelines will determine the future character of the forest through decisions on intensity of management (everything from thinning to application of herbicides and use of genetically-selected stock), rotation length, and effects of timber management on other resources.

- Even-aged management and mean annual increment of growth [Sec. 219.12(d)(ii)(C)]:

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-- stands to be managed under an even-aged silvicultural system will not be harvested until they have "reached the culmination of mean annual increment of growth." Culmination of mean annual increment (MAI) refers to the point at which a tree's annual growth rate slows and new young trees could produce more wood than the existing ones.

Trees can be cut before they reach culmination of MAI for silvicultural thinnings, removal of trees in "imminent danger of pest attack or disease," and salvage of dying trees.

Issues:

The determination of culmination of MAI establishes the minimum rotation periods, that is, how long trees are permitted to grow before they are cut. MAI will determine the age composition of the forest.

- Departures from nondeclining evenflow [Sec. 219.12(d)(iii)]:

-- the conditions under which departures from the base harvest schedule--that is, departures from nondeclining evenflow--will be permitted are among the most controversial provisions of the regulations. Under the regulations, departure will be permitted when:

- high mortality loss can be reduced or prevented;
- forest age-class distribution can be improved, facilitating future sustained yield management;
- adherence to base harvest scheduling "would cause a substantial adverse impact on a community" or the forest's economic area;
- adherence to the base harvest level level would prevent achievement of RPA Program goals.

-- A forest plan that recommends departure must be approved by the Chief; the Chief's decision is appealable to the Secretary of Agriculture.

Issues:

Departure from non-declining yield accelerates the rate at which old-growth is harvested. Issues relate to decisions on the desirable age-class mix in a forest, maintenance of a steady flow of timber over time, and the degree to which local communities' economies might suffer in the near term, if old growth is not cut to maintain supply, and in the future, when there may be a fall-off of supply until the new trees reach a merchantable size.

Succeeding sections of Sec. 219.12 discuss how forest plans are to deal with the other national forest resources--wilderness, fish and wildlife (including threatened and endangered species), range, recreation, minerals, water and soil, cultural resources, and research natural areas. The regulation's language on planning requirements for each of these resources is relatively unambiguous.

MANAGEMENT STANDARDS AND GUIDELINES

The final major section of the regulations sets forth management standards and guidelines for the National Forests. The standards and guidelines are aimed at timber management and the protection of other resources. As stressed earlier, regional and forest planning actions are linked to this section. A great many of the planning actions refer to the standards and guidelines; it is important to be familiar with them.

Though the bulk of the management guidelines and standards deal with timber management, the section opens with a set of guidelines that are intended to insure consideration of non-timber resources.

The requirements dealing with wildlife have generated the most questions--and controversy. Specifically, the regulations require:

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- Maintenance of "viable populations of all existing native vertebrate species and improvement of habitat of selected species..." [Sec. 219.13(8)].
- Protection of "streams, streambanks, shorelines, lakes, wetlands, and other bodies of water..." [Sec. 219.13(4)]. This is amplified in a later paragraph [Sec. 219.13(e)] which requires that "special attention" be given a 100-foot wide strip adjacent to water and including all areas dominated by riparian vegetation. Prohibited are practices that cause "detrimental" changes in water temperature or chemical composition, blockage of streams, or deposit of sediments "which seriously and adversely affect water conditions or fish habitat."
- Provisions for and maintenance of "diversity of plant and animal communities to meet overall multiple use objectives..." [Sec. 219.13(b)(5)]. This requirement also is expanded upon in another later paragraph [Sec. 219.13(g)] which makes an attempt to define diversity. It says, in part, that management "to the extent practicable, will preserve and enhance the diversity of plant and animal communities, including endemic and desirable naturalized plant and animal species, so that it is at least as great as that which would be expected in a natural forest* and the diversity of tree species similar to that existing in the planning area." Specific direction to the forest staffs on the precise criteria for diversity is yet to be written.

* The Forest Service defines "natural forest" as "the condition of a forest environment at any point in time, including its associated plant and animal communities, which has been reached essentially through the process of natural succession" Forest Service Manual, Interim Directive No. 6, March 10, 1980.

Other controversial portions of the management guidelines and standards deal with timber management. Three areas warrant special attention.

Even-Aged Management

The control of even-aged silviculture--clear-cutting, in which all trees are harvested in a relatively short time, and shelterwood and seed tree, in which some trees are left to shelter seedlings and provide a seed source and then harvested when the new stands are established--was one of the major objectives of the National Forest Management Act.

The regulations [Sec. 219.13(d)(2)] specify maximum size limits for cuts--60 acres for Douglas fir in California, Oregon, and Washington; 80 acres for southern yellow pine types in the South; 100 acres for hemlocksitka spruce in Alaska; and 40 acres for all other types [Sec. 219.13(d)(2)]. This means that there is a 40-acre limit for the mixed hardwoods of the Appalachians and mixed conifer forests of the Rocky Mountains and Lake States, and the forests of New England. However, the regulations also provide for clearcuts larger than the regulation's maximums "where larger units will produce a more desirable combination of benefits" [Sec. 219.13 (d)(2)(i)].

The reader will recall that the regional forester is to establish regional standards and guidelines for the maximum size, dispersal, and variation of openings created by application of even-aged management. This is intended to permit a recognition of differences--in both tree types and management emphasis--among forests in a region. The regional forester will decide if and where larger cuts are to be permitted. This is to be spelled out in the regional plan and is likely to be very controversial where timber is of high commercial value.

In addition to public review of regional plans, the public will also have an opportunity to comment on individual timber sales that exceed the size limits. The regulations require that there must be public notice of such a sale, with 60 days for public comment. Sales with cut openings exceeding the maximum limit must be reviewed by the regional forester.

The regulations also require that cut blocks and strips be "shaped and blended" to enhance wildlife habitat and soften the aesthetic impacts [Sec. 219.13(d)(1)]

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Reforestation

The management standards and guidelines also reinforce the reforestation requirements of RPA. Management prescriptions are to "assure" that lands can be "adequately restocked..." [Sec. 219.13(c)(2)]. A later paragraph specifies that "cuttings will be made in such a way as to assure that lands can be adequately restocked within five years after final harvest" [Sec. 219.13(h)(3)]. Each regional plan is to include regional silvicultural guides, with regeneration standards, for each forest type.

Departures from Nondeclining Evenflow

The term "Nondeclining evenflow," used to describe the most controversial policy toward the old-growth Douglas fir forests in the Pacific Northwest, is not used in the regulations. Yet it lurks behind much of the language dealing with timber harvest scheduling. This is the crux of the departures issue discussed earlier under forest planning actions.

Briefly, nondeclining evenflow means that current harvests will not exceed future growth. This sharply limits cutting of the old-growth inventory. The Forest Service has pursued a policy of gradual drawdown of this inventory, a policy that has drawn intense criticism from the timber industry. However, in late 1979, President Carter directed the Forest Service to speed up planning on some western forests "with the objective of increasing the harvest of mature timber through departure from the current non-declining evenflow policy." Departures are provided for in Sec. 219.13(h)(2).

An understanding of the regulation's terminology is essential. The base harvest schedule is the amount of timber which can be harvested each year of the management program and still insure that there will be no decrease in yield in the future. This is nondeclining evenflow. The forest plan then sets forth a selected harvest schedule--the actual amount of timber which is proposed to be harvested annually. The selected harvest schedule establishes the allowable

sale quantity--the amount of timber that will be offered for sale over the term of the forest planning period. In most cases, this will be 10 years. Under usual conditions, one-tenth of the selected harvest level will be sold each year--for an average annual cut of 10 per cent. The regulations, however, permit the sale in any one year to exceed the average, "so long as the total amount for the planning period does not exceed the allowable sale quantity." In other words, harvests may exceed the annual allowable sale quantity, so long as the 10-year harvest level is maintained. A departure occurs when a forest plan proposes a 10-year selected harvest level which, over the term of the plan, exceeds the base harvest schedule. Departures are permitted, under the regulations, for several reasons [Sec. 219.12(d)(iii)], the most controversial of which is to prevent "a substantial adverse impact upon a community in the economic area in which the forest is located."

PLANNING SCHEDULES

Planning for the National Forests and Grasslands is now well underway. While the NFMA amendments established 1985 as the deadline for the completion of forest plans for all units, the Forest Service set its own deadline of October 1983.

To meet this deadline, the Forest Service has directed regional foresters to have draft regional plans completed by the end of 1980. Faced with this deadline, all regions were well into plan development even before the 1980 Program was completed.

The more than 150 forests and grasslands are in different phases of the process. A number of forests have plans prepared under the pre-NFMA planning process which must now be revised. Other forests had to start from scratch.

In response to the Presidential Order to accelerate planning for those National Forests that have substantial amounts of old growth, in order to consider departures, the Forest Service has moved planning deadlines up for 16 western National Forests. Draft plans for the Mount Hood, and Deschutes in Oregon; the Sierra, Kamath, Shasta-Trinity and Six Rivers in California; the Lolo, Flathead and Kootenai in Montana; and the Olympic in Washington are due in 1981. Draft

plans for six additional forests, the Gifford Pinchot, Mount Baker-Snoqualmie and Wenatchee in Washington, and the Rogue River, Siskiyou, and Wallowa-Whitman in Oregon, are due in 1982.

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The status of regional and National Forest planning is changing almost daily. As one might expect, there is wide disparity among the forests, and even among regions. Some forests are (at this writing) still working on issues identification, while those forests with closer deadlines for draft plans are developing alternatives.

This is not to say that persons wishing to participate in planning have missed a fast-moving train. Some catch-up work may be required, but, even on those forests on the fast track, evaluation of the draft plans will continue well into 1982. For most forests not on the fast track, planning will be going on for at least the next two years.

NOTE: A number of organizations publish periodic reports on Forest Planning issues. In addition, the Nationwide Forest Planning Clearinghouse publishes a monthly periodical, Forest Planning, which discusses current national forest planning issues. Its address: P. O. Box 3479, Eugene, OR 97403



PUBLIC FORESTS AND THE PUBLIC INTEREST

By Robert T. Dennis

Broad and fundamental forestry legislation approved by Congress in the 1970's offers new hope of improving private woodland economics and management. As the 1980's begin, however, failure to implement fully the new legislation belies its promise.

FEDERAL FOREST LEGISLATION AND NON-FEDERAL FORESTS

RPA requires the systematic assessment of resource and management opportunities for all forests and rangelands, whether in public or private ownership. Its policy statement declares that "inasmuch as the majority of the Nation's forests and rangeland are under private, state, and local governmental management and the Nation's major capacity to produce goods and services is based on these nonfederally managed renewable resources, the Federal Government should be a catalyst to encourage and assist these owners in the efficient long-term use and improvement of these lands and their renewable resources consistent with the principles of sustained yield and multiple use."

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The Act goes on to require federal action to "explain the opportunities for owners of forests and rangeland to participate in programs to improve and enhance the condition of the land and the renewable resource products therefrom."

Finding "the Nation's capacity to produce renewable forest resources is significantly dependent on . . . nonfederal forest lands," Congress fleshed out RPA's basic directives as they relate to state, industrial, and other private forests by writing the Cooperative Forestry Assistance Act of 1978 (CFAA).

In large part, CFAA simply pulled together and gave new emphasis to federal programs authorized by previous laws in order to advance state and private forest management. Those programs included financial and technical assistance for multiple resource management, fire protection, insect and disease control, genetic tree improvement, nursery production, and wood utilization, as well as incentive payments to individual landowners. But CFAA also established new federal policies underscoring the importance of nonfederal forest lands, and it signalled new federal interest in comprehensive forest planning at the state level.

It seems certain that RPA and CFAA will make a positive contribution to non-federal forest management and production in the United States. Their greatest impact on non-federal forests will likely derive from the context they provide for the work of the 50 state foresters, who in directing state programs for forestry, also administer funds provided by the federal government.

Several sections of CFAA assist and otherwise encourage (but do not require) development of individual "state forest resources programs." Partly as guidance for state planning efforts, RPA directs the Forest Service to update the national Program every five years and to prepare a new Assessment every decade. This directive assures regular updating of nationwide woodland resource inventories, assessments, and priorities, as well as national forestry objectives--all of which are tools essential to adequate planning at the state level.

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At minimum, the direction and assistance offered by RPA/CFAA should stimulate upgraded planning and management of non-federal public forests. Totaling about 30 million acres, such forests comprise 6 percent of U.S. "commercial timberland." The two Acts outline major roles for state foresters--who are not only immediately responsible for state-owned forests, but also often occupy guiding roles in management of forest lands under the jurisdiction of local governments.

However, several factors constrain management of the non-federal public forests. In the West, a number of states must manage state forests under a constitutional mandate to maximize revenue--which means an emphasis on timber production. Also, in many states, non-federal public forest systems are small or fragmented; in only a handful of states are they important sources of timber and other renewable resources. Finally, many state forestry agencies are understaffed and without the capability of fully implementing multiple-use concepts. Even so, many state and local forests are managed for uses and purposes in addition to timber production, allowing a ready response to the philosophy of RPA and CFAA.

Because they call for development of state forest resource programs--meaning state forestry plans- RPA and CFAA appear to reach far beyond publicly-owned forests, and to pave the way for comprehensive multiple-use planning for all private forests as well. Indeed, CFAA offers a special incentive for preparation of state forest resource programs. To help build flexibility at the state level, federal funds can be made available as a lump sum ("consolidated payment") to states that qualify by developing such programs. This is a departure from an activity-by-activity (fire prevention, insect control, etc.) formula or cost-share basis as in the past.

Comprehensive state forestry planning is still in its infancy, and we are at least two years away from any solid assessment of CFAA's ultimate impact in this field. Only six states received consolidated payments in 1980, and it appears that detailed plans will have been adopted in just 10 states by 1981. However, efforts to develop forest resources programs

are currently underway in 46 states, according to Forest Service's State and Private forestry staff.

New Hampshire's state forester, Theodore Natti, said in March 1978 that "RPA has really stimulated the states, or more frankly, forced some states into planning."* By requiring description of National Forest needs and identification of National Forest objectives, RPA ought to lead to determination of optimal long-run relationships between public and private forests. Similarly, CFAA is intended to provide the tools for assuring that privately-owned forest lands can and will meet their share of the national need.

In the final analysis, RPA and CFAA address management systems as well as the resources themselves. Together, the two Acts should encourage the states to convert traditional passive programs into activist institutional approaches to all owners of private forests, and aggressive pursuit of better forest management. They should, for example, encourage each state to reexamine and reappraise its basic forestry statutes--to consider the desirability of a forest practices act, or of establishing a system to ensure that government forestry assistance goes to landowners who will in fact produce timber or other public benefits.

RPA/CFAA LIMITATIONS

With respect to planning, then, RPA and CFAA deal, to some degree, with all nonfederal forests--state, industrial, and small landowner. Otherwise, however, federal attention to non-federal forests focuses on nonindustrial private forests (NIPF)--generally those of 1,000 acres or less in size. (Forestry Incentive Program--FIP--payments are, by law, limited to ownerships of 5,000 acres or less, but the typical FIP recipient manages less than 100 acres of woodland.)

* Theodore Natti, "Forest Policy in a Time of Change," presentation given at the 75th Anniversary of the University of Maine Forestry School, March 27, 1978, Forest Notes 133: 1978, pp.14-18.

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The Forest Service does not provide technical or financial assistance for direct application to state forest lands. The Forest Service and the National Association of State Foresters have agreed, for the time being, to continue the informal agreement established under the old Cooperative Forest Management Act--that is, not to have federal assistance applied to nonfederal public lands. However, states are being encouraged to consider state and other nonfederal public lands in state forest resources programs. State foresters are reluctant to have federal funds diverted from existing private woodland-oriented programs; significant federal aid to state forests will depend on higher levels of funding for state and private forestry assistance.

Similarly, it has been judged inappropriate to provide what would amount to a federal subsidy to the forest industry through financial assistance to large forest landowners--and that is why FIP financial aid is limited to the non-industrial private forestlands.

The question here can be raised with respect to all private lands: Is it appropriate to spend public money to promote increased production from small private holdings, with eventual economic gain by the landowner? As discussed more fully below ("Importance of the Private Forest"), there is no dispute that the nation requires better management of private forests. The Draft 1980 RPA Assessment emphasized the importance of private lands in meeting future needs. Most experienced observers conclude that incentives provided by the public are essential to realization of management opportunities.

In the political sense, however, the issue remains unresolved. Planning under RPA and CFAA is going forward. Plan implementation suffers from lack of personnel and money.

ARE RPA AND CFAA REALLY WORKING?

Thus, despite the comprehensive provisions of RPA and CFAA, not to mention the rhetoric which attended their enactment, many questions remain about forest-level implementation of both laws.

Perhaps the best way to measure federal intent in this area is money. Budget requests by the Administration for state and private forestry and budget votes by the Congress are not keeping pace with RPA Program figures. The Fiscal Year 1979 budget for CFAA programs was but 58 percent of the RPA-scheduled level. The Administration's 1980 request, (although providing more money for southern pine regeneration on NIPF in the South), amounted to just 50 percent of the 1979 budget and 25 percent of RPA; Congress upped the request, but only to 40 percent of the RPA schedule.

In part, these figures reflect an Office of Management and Budget belief that federal expenditures to enhance management of private lands cannot be justified.

Weaknesses in the program are deep-seated. One is the lack of quality control in state forestry planning; the states are pretty well left to themselves to develop their plans. The legislative history of CFAA makes clear that Congress is unwilling to deny financial assistance to states that fail to develop acceptable forestry plans.

In addition, the Cooperative Forestry Assistance Act states as basic policy, "It is in the national interest for the Secretary [of Agriculture] to work through and in cooperation with state foresters or equivalent state officials in implementing federal programs affecting nonfederal forestlands."* The Forest Service seems to interpret this as ruling out any direct contact at all--even though many observers feel strongly that the NIPF owner needs all the help potentially available.

In short, actual budget figures are not keeping up with RPA projections of financial need--and it can be argued that even the RPA schedules are conservative. Meanwhile, the NIPF "lobby" is weak and largely unorganized; those who do play the legislative game are forced, according to one observer, to spend their energies "protecting the fire control

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* Cooperative Forestry Assistance Act of 1978.

"budget" rather than promoting the comprehensive approach outlined by RPA/CFAA. The combination of tight budgets, non-vocal constituency, and procedural rigidity produces a gloomy picture of bare continuation of outmoded programs which--as Carl Reidel says--haven't worked.

IMPORTANCE OF THE PRIVATE FOREST

Small, privately-owned forests comprise 58 percent of the 488 million acres of "commercial" forestland in the United States. They produce 38 percent of the nation's softwood harvest and 76 percent of hardwood.

The Society of American Foresters reports, however, that, "Virtually all studies reveal large-scale opportunities to improve [NIPF] management from the owners' and society's points of view."* With the depletion of the "bank of privately-owned old-growth softwood timber in the Pacific Northwest, and concern of a consequent--if temporary--fall-off in timber production from an area that has traditionally provided a large quantity of the nation's timber, attention is turning to other areas and other ownerships--particularly the East and Southeast and non-industrial private forests."**

If such production is indeed vital, steps must be taken today to assure that the resource will in fact exist. Alabama's state forester, C.W. Moody, explained the situation succinctly while appearing before a Senate appropriations subcommittee in 1978: "Producing timber for the nation's future is a long-term program which must start today. It is not a program which can be turned on and off. Forest tree nurseries must secure seeds, nursery beds must be cultivated, seeds must be planted, and forest tree seedlings one or two years old must be planted or plowed under. Demands must be

* Improving Outputs from Non-Industrial Private Forests, Study Report of a Task Force of the Society of American Foresters, Society of American Foresters, March, 1979,
p.1.

** Ibid.

forecast so that seedlings are available as needed. You cannot plant the seeds one year without having a place to plant the seedling trees in succeeding years. Once the forest is established, it must be protected and managed. Ultimate harvest and cash returns will be many years in the future depending upon the product desired."*

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Timber management is a long-term investment, frequently transcending generations. Our economic system does not by itself stimulate NIPF owners to do long-range financial planning or to make desirable long-term management decisions. There is no 20-year timber futures market. If the public stands to benefit substantially from upgraded management of the NIPF, it would seem to be in the public interest to provide incentives above and beyond those of the economic marketplace. That is among the conclusions reached by Congress when it approved the Cooperative Forestry Assistance Act.

COOPERATIVE FORESTRY ASSISTANCE TODAY

Small private forest owners are eligible for on-the-ground technical advice and management assistance from foresters employed by the state forestry agency. Such help includes preparation of woodland management plans, marking trees for timber sales, and advice concerning tree-planting, development of wildlife habitat, and timber stand improvement. In 1976, these services were financed 23 percent by federal grants to the states and 77 percent from state sources. Federal money appropriated each year for this program is apportioned among the states by the Forest Service after consultation with state forestry officials; federal allotments in any year may not exceed the amount provided by the states.

* C.W. Moody, National Association of State
Foresters Recommended Amendment to Senate
Appropriations Subcommittee on Agriculture,
Rural Development and Related Agencies,
March 20, 1978.

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Additional forestry assistance to the private owner may be provided by the state extension services--but meaningful extension activity in the field of forestry has been limited to only a few states, extension agents traditionally being trained and encouraged to focus on agricultural subjects. As Max Peterson, Chief of the Forest Service, sees it, "State Cooperative Extension in forestry has . . . been an unloved stepchild."*

Whatever their source, present cooperative forestry efforts reach only a small percentage of NIPF owners--such a small percentage that a previous director of Forest Service State and Private forestry activities terms the federal involvement "a pilot program."** To date, cooperative forestry assistance has reached perhaps a few hundred thousand out of some 4 million NIPF owners.

Another indicator of inadequacy is the Forestry Incentives Program (FIP), established in 1973 to provide federal sharing of forestry costs with NIPF owners. According to the 1980 RPA Assessment, for the 1974-77 period FIP cost-sharing assisted reforestation of 425,000 acres and stand improvement of 370,000--a total of 795,000 acres thus treated under this program. In 1979, the National Association of State Foresters estimated that FIP had reached 1.2 million acres. Whichever figure is correct, it is clear that FIP is a minimal effort since NIPFs encompass a total of 296 million acres. At the 1980 funding level of \$15 million, FIP each year could treat only one-tenth of one percent of those 296 million acres.

Funding shortages make it exceedingly difficult to address other factors inherent in the NIPF management problem.

* Address to National Conference on Private Nonindustrial Forests, November 1979.

** Boyd Rasmussen, personal communication, October 29, 1979.

First of these is the fact that few NIPF owners have the forester's 20-80 year outlook--and are therefore unlikely to spend the dollars or make the management decisions required for sound forest management. To some extent, this "vision problem" may reflect understanding that timber investments in the United States have not in the past produced profits at the same rate as investments in other sectors--meaning that proper management of NIPFs has depended upon other than purely economic incentives.

Fiscal contributions to the vision problem may be self-correcting. Said Lester Holley, "It appears that we're moving through a transition period in which current timber prices are becoming high enough to catch the nonindustrial private landowner's eye. In some cases, it is now possible to project fantastic returns on timber-growing investments."* Of course, such new economic information must somehow be brought to the NIPF owner's attention.

And the vision problem is not solely one of economics. Many NIPF acres are owned by farmers who are accustomed to short-term harvest cycles and 1-5 year planning horizons, rather than 2080 year outlooks. Furthermore, there is uncertainty about making planning and investment decisions which will have unknown impact upon, and may only benefit, the next generation.

Finally, while the long-range outlook may seem cloudy to the NIPF owner, short-term economics and environmental factors are quite apparent. Thus, many owners show a strong and understandable tendency to seek immediate cash return on the grazing, sapling (nursery), Christmas tree, or firewood market. Others express concern about the effects timber harvest will have on wildlife or other personally perceived woodland values, and decline for that reason to enter into forest management programs.

* Lester Holley, "Grow A Crop of Money Trees," American Forests October, 1979, pp. 18-19.

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Landowner education and information would seem the key to improving management of NIPFs. This is a major thrust of the Renewable Resources Extension Act--a companion bill to CFAA, which has, thus far, received no funds from the Congress. If the intent and spirit of RPA are not translated into aggressive and comprehensive education efforts, it seems unlikely that the average NIPF owner will develop the long-range outlook and familiarity with forest cycles that are the foundation for revitalized forest management.

Beyond the landowner vision problem, weaknesses in the cooperative forestry program itself severely undercut its effectiveness. Foremost among these, at least in most states, is the fact that the landowner must take the initiative in seeking forestry advice and learning about management incentive programs. Often because state forestry agencies do not have the personnel, there is little effort by state forestry agencies to reach out to NIPF owners and "sell" forest management. The only advice many landowners receive is through articles written by the state forestry staff in rural newspapers.

Similarly, even after contact is made with a landowner, the present cooperative forestry program rarely provides meaningful follow-up. But follow-up is vital on two counts. First, few NIPF owners are likely to develop a practical working knowledge of forest management on their own; continuity of contact and a constant flow of information and advice are essential. Second, from the public's standpoint, there should be assurance that public assistance programs for stocking and improving timber stands --or enhancing wildlife and watershed values-- do eventually "pay off"; why provide incentive for planting a tree which is cut down before its time because of a decision to shift the site to soybeans or real estate development?

Lack of outreach and follow-up are not surprising at current state forest agency budget and staffing levels. The promise of RPA for private forestlands seems remote indeed unless those deficiencies are corrected--most likely through larger appropriations at the federal level.

Another weakness of the current cooperative program reflects language incorporated in the Cooperative Forestry Assistance Act [Section 4(e)]: "The Secretary (of Agriculture) shall encourage participating states to use private agencies, consultants, organizations, and firms to the extent feasible for the preparation of individual forest management plans." This directive has evolved from, and is supportive of, longstanding informal policies in most states (in part because state forestry personnel lack economic expertise) that NIPF owners are to get economic advice from consulting foresters, not state forestry personnel.

The fact is, however, that many NIPF owners are not accustomed to dealing with consultants, and are therefore little likely to seek one out. Beyond that, there are not enough consultant foresters (the RPA Assessment reports there are about 1,500 in the United States, but Forest Service sources estimate only about 800 are available to NIPF owners) to handle the potential demand--and the consultant's own economic needs attract him/her toward the larger land holdings. This all leaves the NIPF owner more or less at the mercy of the timber or pulpwood buyer for hard economic information, with limited opportunity to gain understanding of the economic possibilities of forest recreation, fuelwood, or other non-timber alternatives.

The effect of this is to make it difficult for the forest landowner to get solid economic advice--yet economic considerations are just as basic to forest management planning as the site, stocking, and species data provided as a matter of course by state foresters.

Lesser weaknesses of the current program have been suggested earlier. Many state agencies, for example, tend to stress production of softwoods. However, the NIPF owner--at least in the East and South--is often personally interested in non-timber values of hardwood forests, and thus more likely to be attracted to a management plan that accentuates or makes room for hardwood species. Similarly, the present program pays minimal attention to non-timber aspects of the NIPF, such as its public values for watershed, wildlife, or aesthetics.

IMPROVING THE COOPERATIVE FORESTRY PROGRAM

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There are a number of steps that might be taken to upgrade the cooperative forestry program, and thereby to implement RPA's intent with respect to private lands. To accomplish this, however, assistance to private landowners will require broader public support and a higher policy priority than is now the case.

1) Provide more money for the states.

Without larger appropriations from both federal and state sources, it will be impossible to solve the problem of reaching NIPF owners and making meaningful assistance available to them. There are 4 million NIPF owners; even assuming that half of those owners are interested in land solely for speculative or tax shelter purposes, there still remain 2 million owners likely to respond to forestry assistance.

Further assuming that each owner should be contacted at least once every five years, 400,000 owners would have to be contacted each year. Forest Service sources suggest this would require 2,000 foresters, each working with 200 owners a year--meaning almost one each working day, with scant time for record-keeping or plan workup. In any event, there are today but 600 to 700 foresters at the state level; their duties include fire control, speech making, and public forest management as well as advising NIPF owners.

2) State foresters should provide comprehensive economic advice to landowners, including the facts of forest taxation, as a major incentive to improve forest management. Advance estimates should be prepared as to what should be expected from a particular timber sale, and oversight provided to assure that owners are paid for all material harvested. State foresters should also offer advice about economic opportunities in such fields as forest recreation and fuelwood.

3) Contract systems should be developed (or expanded in the few instances where they already exist) to provide annual payments to NIPF owners, in order to convert long-range management plans into short-term economic benefits. As is current practice in some places, contract payments for eventual timber

and pulpwood harvest should be the province of industry. One approach might be federal loans to landowners which would be repaid when the timber is sold; this, in effect, would give the landowner some "income" prior to harvest. Perhaps, too, the FIP could be modified to provide annual public payment for proper management of watersheds and other public resources. Within the spirit of RPA, FIP contracts could be used to assure maintenance of the land involved in forest use for multiple purposes.

4) The Forest Service and Department of Agriculture should institute programs of direct contact with and assistance to NIPF owners. The landowner needs all the help that can be made available. Federal programs should supplement rather than supplant state efforts; the policy directive of CFAA concerning cooperation with state officials need not be repealed. Federal efforts could include:

- An aggressive information program focused on long-term needs for forest products and sound forest management. Such information should be comprehensive, stressing hydrology, wildlife, and aesthetic benefits of forest management, as well as economics.
- Use of the existing agricultural extension system to provide economic and management advice to NIPF owners, many of whom already rely heavily on extension assistance in other fields. This would require the addition of extention specialists in forestry.
- Research specifically directed at the needs of owners of small forest tracts. At present, most research simply does not fit the interests of small woodland owners. Many NIPF owners favor hardwoods over softwoods for a variety of personal reasons, and many prefer uneven-age management. More attention should be given to hardwood silviculture and silviculture that is compatible with or enhances other forest values, such as wildlife or beauty, which many NIPF owners find desirable.

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- Special information on alternative energy as a potential short-cycle management objective of forest lands. (Fuelwood consumption had already reached 18 million cords by 1976, almost entirely for domestic heating and cooking--industrial and utility use is now being tested.) As a corollary, the Forest Service should also develop a fuelwood strategy aimed at educating and helping NIPF owners not to destroy long-term woodland values in favor of short-range firewood profits.

5) Federal tax policies should be reviewed with the special needs of NIPF owners in mind.

This is particularly important with respect to management expenses that are not returned until a subsequent generation of ownership. Treating timber growth as a capital gain for tax purposes is clearly in the NIPF owner's interest, but nonetheless a change in existing law to allow tax credits for annual expensing of normal management costs would remove a recognized impediment to substantial management expenditures by NIPF owners. In addition, given adequate assurance of continuing management for forest purposes, federal tax law should provide without question that forest lands will be appraised for inheritance tax purposes at use values rather than speculative values.

6) The Forest Service should establish general standards for state forest resource programs. Congress should amend the Cooperative Forestry Assistance Act to tie federal payments to states to existence and proper implementation of adequate state programs. As in the case, for example, of coastal zone management planning, this would help assure proper use of federal funds and priority attention to identified priority needs.

7) All states should adopt forest practices acts, tailored to their own forest types, ownership patterns, and geography, as special assistance to the NIPF owner. In most states today, the NIPF owner's basic defense against poor timber harvest practices is a well-conceived contract, along with the will and resources to use it in court if necessary. Legally-established harvest standards would

give the forest owner certain baseline protection; more stringent controls could still be provided by contract.

8) The Forest Service and state foresters should develop sound documentation about public benefits that result from the federal (and state) investments in private forestry. In part, at least, the low level of appropriations are evidence of skepticism on the part of Congress and the Office of Management and Budget that the public's investment in private forestry does not return commensurate public benefits. Assuming that these investments are indeed justifiable, the Forest Service should provide a documented rationale to the Congressional appropriations committees and the executive branch budget reviewers.

LOOKING AHEAD

The public is paying too little attention to private forests; federal cooperative forestry efforts are inadequate. Yet, most of the elements necessary to correct this situation do exist.

Certainly, in enacting RPA and CFAA, Congress set the stage for action. There is program experience and competence at the state as well as federal level. Current weaknesses are due more to lack of personnel and budgets than to deficiencies in knowledge or professionalism.

At quick glance, the need is simply understood: begin at the federal level to put the provisions of RPA and CFAA to work. By and large, the task is to expand the existing capabilities of the federal cooperative forestry program, and to build upon the solid foundation provided by the professional commitment of Forest Service personnel.

Efforts are already underway within the Department of Agriculture to accomplish these objectives. Current initiatives include:

- promotion of State Forest Resource Program development;

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- intensification of forestry extension efforts under the Renewable Resources Extension Act, with help from Soil Conservation Service foresters;
- an examination of the forest tax picture;
- a push for increased FIP appropriations;
- provision of market information, in the form of a Forest Service national price reporting service, through the cooperative extension program;
- pilot fuelwood projects.

In other words, in USDA and the Forest Service, the roots of the cooperative forestry program appear quite vigorous. The remaining needs are nourishment and care from OMB and the Congress so that this stunted program can grow to mature size and strength.

The turnaround could be quickly accomplished. Whether in fact it is will depend largely upon the public's interest. Conservation, business, and civic groups alike should take a new look at the private forest; they should participate in the state forestry planning process--both to learn and to exert influences. All such groups do have an interest in the private forest; unless that interest is expressed, the cooperative forestry program will not begin to achieve its potential.



RPA'S IMPACT ON FORESTRY RESEARCH

By Robert W. Harris

Foresters, biologists, hydrologists, economists, engineers, statisticians and other forestry researchers will play a critical role in achieving the goals of the RPA Program.

Consider their past accomplishments: during America's Dust Bowl period, they pioneered the idea of planting belts of fast-growing trees to shelter millions of acres of land from erosion. Since the 1930s, research into better ways to detect forest fires has reduced wildfire losses by two-thirds. Hundreds of other achievements are worthy of note--from more efficient methods of timber harvesting and new wood products like particleboard and fiberboard to enhanced or protected recreation areas, watersheds, and wildlife habitats.

Projections for future demand on forest lands underline the importance of continued innovation. For example, timber production is expected to increase by 73 percent by the year 2000; use of water resources by 23 percent; and demand for small-game hunting 21 percent.*

* See National Program of Research for Forests Associated Rangelands, prepared by a joint task force of USDA and the National Association of State Universities and Land Grant Colleges (August 1978); p. 5-6.

Robert W. Harris is a former Forest Service associate deputy chief for Research.

Increasing demand for forest goods and services will escalate conflicts between alternative uses and put innovation at a premium, whether it be designing integrated systems to more than double the harvest of wood per acre or exploring the use of nitrogen-fixing plants to boost the height of black walnut trees by 82 percent.

The goals of RPA emphasize the need for new information to provide the basis for forest policy, planning and management--to encourage improved economic analysis, to increase productivity of prime forest lands, and to provide better information on how a management strategy for one resource will affect other resources. Clearly the Assistant Secretary of Agriculture, M. Rupert Cutler, was not exaggerating when he concluded that to make the RPA initiative work, "excellent research--with its results delivered into the hands of those who need it--is absolutely essential."

The men and women who conduct research belong to a widespread research complex that includes federal and state agencies, the academic community, and forest-related industries. Altogether this research complex spent about \$331 million on forestry research in fiscal 1978.

Perhaps two-thirds of the non-private forestry research is performed by or in connection with agencies of the U.S. Department of Agriculture. By far the largest research group is the Forest Service, with more than 930 staff scientists and a FY 1980 appropriation of \$109 million.

Within the federal government, researchers are also at work in the Department of Interior, the Tennessee Valley Authority and other agencies. Some states conduct their own research efforts.

Another notable source of research is the more than 60 forestry and natural resource schools at land-grant colleges and other academic institutions across the country. Those academic centers work closely with the Forest Service through longstanding tradition and legislation.

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Research sponsored by private industries--an estimated \$169 million in 1978--is mainly focused on new products and processes such as building, construction, pulp and paper. Because of its commercial emphasis and often proprietary nature, much industry research is of only limited use to public and private land-owners. It should also be noted that compared with other industries, companies associated with forests and rangelands are among the lowest spenders for research.

In fact, the entire research budget of the United States in this important area seems out of kilter. About 6 percent of the U.S. gross national product is based on wood; yet forestry makes up less than one percent of the nation's \$32.3 billion budget for research and development.

Despite the past successes of researchers, the Renewable Resources Foundation concluded after a review of forestry and range research that "... with the management of renewable resources becoming increasingly sophisticated, there is serious question as to whether or not the present research system is adequate to meet current and future demands."*

Yet the continuing RPA planning process, including the current discussion of the 1980 Program, holds promise for increased emphasis on research in the future. For that promise to be realized, however, planners, policy makers and others who participate must answer a number of vital questions. Among them:

- Has forestry-related research, as the Renewable Resources Foundation Report put it, "been confined too much to examining one piece of the jigsaw puzzle with not enough attention to the matter of how it fits in with the other pieces in a future

* A Review of Forest and Rangeland Research Policies in the United States, published by The Renewable Natural Resources Foundation, Washington, D.C. (September 1977), p. 1-2.

different from now."* Or in other words, what is the role of multi-resource planning in the future?

- Can RPA produce a balanced program of research, both in subject areas covered and in the balance of basic to applied research? "The historic primary emphasis on timber management research needs to be modified to include greater relative emphasis on environmental/ecological, wildlife, and other aspects of resource use."**

- Can RPA provide mechanisms to encourage forestry school contributions to research to meet RPA goals, and at the same time protect the independence of these institutions and their scientists?

- Can RPA foster a climate for excellence in research?

For answers, we need to look more closely at the legislative authority, the Research program of the Forest Service and the research planning process.

FORESTRY RESEARCH: AN OVERVIEW

Congress created the charter for Forest Service research in 1928, when it enacted the McSweeney-McNary Act. So comprehensive was this legislation that it served for 50 years, until it was finally superseded in 1978.

A second chapter in forestry research history opened in 1956 when Congress passed the Whitten Act, which authorized the Forest Service to grant cooperative funds to universities and other organizations, both profit and nonprofit. Whitten Act grants not only stimulated forestry research outside the government, but helped coordinate that research with that of the Forest Service and helped train and recruit new forest scientists as well. Its benefits continue today--about \$10 million was available to universities under the Whitten Act in fiscal 1979.

* Ibid, p. 21.

** Ibid, p. 4.

Another landmark for forestry research was passage of the McIntire-Stennis Act of 1962, which authorized federal support for state universities and land-grant colleges with forestry curricula. Although the enabling legislation broadly defined forestry research to include "livestock forage, wildlife habitat, watershed improvement and management for outdoor recreation," the thrust of the program was nevertheless to improve timber production and utilization.* In 1975, for example, 72 percent of the forestry research conducted by McIntire-Stennis institutions fell under the headings of timber management, forest protection, timber and wood products, or harvesting, processing and marketing. Today more than 60 state-supported forestry schools receive McIntire-Stennis funding, about \$10 million for 1980. However, Congress has never appropriated the full amount authorized. In 1977, in fact, the total was only one-fifth as large as the authorization permits.

By far the greatest changes for forestry research resulted from the flood of landmark natural resource legislation in the 1970s. The first event was the emergence of a national policy on environmental protection, culminating in the National Environmental Policy Act of 1970. NEPA introduced several major changes:

- an increased emphasis on environmental aspects of all technological problems. The need to determine environmental impacts of management practices is now built into many state and federal laws.
- an accelerated shift to multidisciplinary research on technological and social needs associated with renewable resources management.
- a strong trend toward more involvement of research users (resource professionals, industries, landowners) and the general public in all matters related to forest and rangeland research.

* Ibid, p. 33.

Then came RPA--the Forest and Rangeland Renewable Resources Planning Act of 1974--which contains the primary legislative mandate for coordination of research with resource planning.

RPA implicitly stresses the need for comprehensive forest and range research to assist in shaping and achieving national goals. However it does not specifically define research; nor does it provide guidelines for research planning or for linking Forest Service research budget requests with the programs of forestry schools and other performers of forestry research. It also fails to provide for an assessment of the state of technology for managing forest and rangeland renewable resources, thus creating a major information gap.

The vagueness of RPA when it comes to research helped prompt the Forest Service to push to include forestry under the planning provisions of a later piece of legislation, Title XIV of The Food and Agriculture Act of 1977. This Act gathers in forestry under its definition of agricultural research: "including range management, production of forest and range lands, and urban forestry."

The vague language of RPA also prompted an effort to supplement the implicit RPA direction for Forest Service research through new research legislation--the Forest and Renewable Resource Research Act of 1978. This new Act complements the policies and directions of RPA by providing the specifics. It defines five major areas of renewable resource research: management, environment, protection, utilization and assessment. It in effect updates the McSweeney-McNary Act of 50 years earlier by providing specific authority for forestry research in such emerging areas of concern as fish and wildlife, aesthetics, wilderness and threatened and endangered species. And it requires that Forest Service research develop information and analytical technology for the periodic renewable resources Assessment mandated by RPA.

The Forest Service regulations that implement The National Forest Management Act of 1978 do contain an explicit role for research. Research needs of National Forests are to be identified at Forest Service experiment stations

and at the national level, and those needs must be considered by Forest Service Research as it prepares the future research agenda. Research must prepare an annual report describing how its efforts meet these National Forest needs.*

It is within the framework of these laws that the forestry research planning process must proceed.

FOREST SERVICE RESEARCH

The Forest Service's Research program is the largest forestry research organization in the world, with more than 930 scientists working in seven research areas.** At last count, 47 percent of Forest Service scientists held a Ph.D degree and 39 percent a master's degree.

Research did not become a separate branch of the Forest Service until 1915, when it was placed under the leadership of Earle H. Clapp. Clapp was responsible for developing and implementing the policy of independent status for research in the Forest Service that continues today. His vision:

to have all at times in the Forest Service a group not under administrative domain, idealistic from the very nature of its work, ready when the occasion demands to supply the criticism which the Forest Service needs to keep it alive and forward looking, and also to perform the same function for American forestry as a whole.

* See "National Forest System Land and Resources Management Planning," Sec. 219.14, Federal Register, Vol. 44, No. 181 (Appendix B of this Guide).

** These areas include multi-resource inventory; timber management; forest protection; wood products; watersheds, soils and pollution; forest range and wildlife; and recreation and environmental values.

The first Forest Service experiment station was created at Ft. Valley, Ariz., in 1908, and was followed two years later by the Forest Products Laboratory in Madison, Wis., a cooperative venture with the University of Wisconsin. In 1912, when citizens asked the Forest Service to find the cause of damaging summer floods in mountain watersheds, the Utah Experiment Station was founded, later to be renamed the Great Basin Experiment Station, and still later the Inter-Mountain Forest and Range Experiment Station.*

The Research program today includes eight forest and range experiment stations in addition to the Forest Products Laboratory. Investigations are now conducted at 82 laboratories located in 43 states and Puerto Rico (see Figure 1). Sixty-six of these are located on or near campuses of cooperating universities.

Research remains a highly decentralized organization. Its lines of authority run from the Chief of the Forest Service down to the project leader of a research work unit (Figure 2).

The Deputy Chief for Research is responsible for day-to-day direction of the research program.

In 1974 the Forest Service reorganized its forest and range experiment stations, creating two new positions in the process. The position of Assistant Director for Planning and Applications was established to assist stations in technology transfer and application of research results. This new assistant director plays a major part in coordinating research planning between the Forest Service, universities and user groups. The second new position, Assistant Director for Continuing Research, was set up to lead all projects -- timber, wildlife, water, recreation, range, etc. -- within a sub-region. At the same time, each scientific project leader was given more responsibility for the technical adequacy of research, including planning.

* See Wendell M. Keck's Great Basin Station: Sixty Years of Progress in Range and Watershed Research (USDA Forest Service Research Paper INT-118).

FIGURE 1

**FOREST SERVICE - U. S. DEPARTMENT OF AGRICULTURE
FOREST AND RANGE EXPERIMENT STATIONS.
FOREST PRODUCTS LABORATORY**

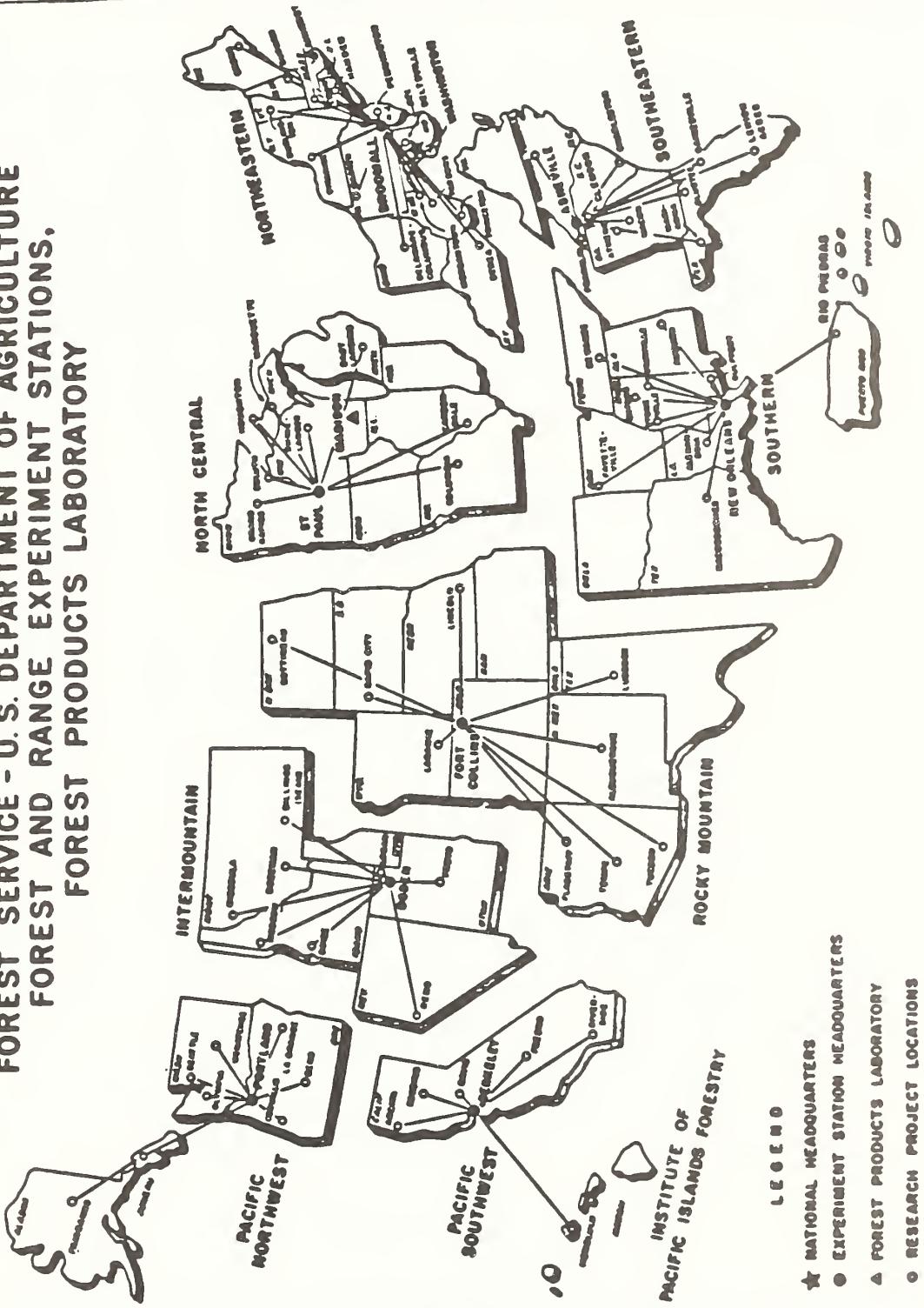


FIGURE 2: Lines of Authority

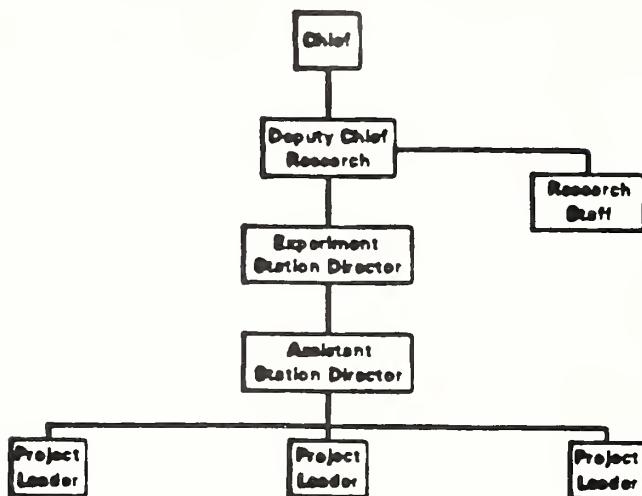
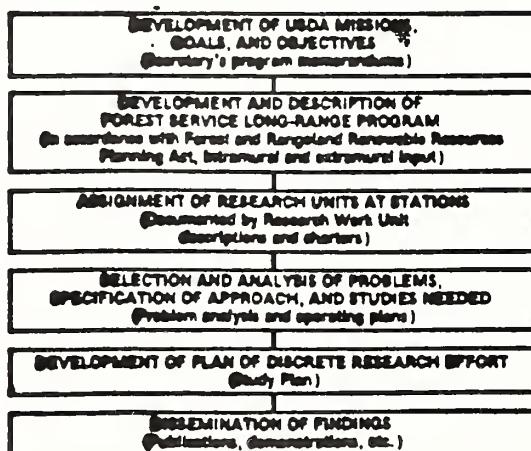


FIGURE 3: Program Development



FIGURE 4: Program Formulation and Documentation



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Along with this 1974 reorganization, the Forest Service also began to establish certain special research, development, and application (R,D&A) programs in fields where research was well along toward possible application. These programs are set up for a relatively short period of time (usually five years) with a specific mission. To date they have included emphasis on rehabilitation of surface-mined areas (Surface Environment and Mining, or SEAM), and development of pest management systems (tussock moth, gypsy moth and southern pine beetle programs), among others. Each R,D&A program has a program leader who reports to the station director.

Figures 3 and 4 (previous page) chart the basic channels for program development and documentation in Forest Service Research.

Research and the 1975 RPA Program

The RPA research plan of 1975 was based largely on a long-range planning effort by the Forest Service called the 1974 Environmental Program for the Future. That plan, quickly rendered obsolete by RPA, contained a section on research needs.

The 1975 RPA Program has had little impact on the long-term trend of research funding. Between 1969 and 1978, Forest Service expenditures for research increased by 31 percent in constant dollars, but the only sizable increase attributed to RPA was \$5 million for a forest survey to improve collection and analysis of resource data for the second RPA Assessment. Forest Service budgets for timber management, range management and recreation research actually shrank during the period in constant dollars.

From 1975-79 Forest Service research funding also lagged while other agriculture and forest-related research units within USDA were making substantial gains. Appropriations to the Science and Education Administration (SEA) increased by 72 percent, agricultural research 55 percent and ESCS (economics research) 75 percent, compared with the Forest Service research growth of only 43 percent.

Within the Forest Service itself, Research has fallen behind appropriations to the National Forests. Had the rate of growth in Research paralleled that of the National Forests since 1975, Research spending for fiscal 1979 would have totalled \$168.2 million rather than its actual total of \$108.2 million. (The FY 1980 appropriation was \$109 million; for FY 1981, President Carter has requested \$124 million.)

Planning the 1980 RPA Research Program

Beginning in 1976, three developments contributed momentum to the effort by forestry research planners to establish a new national agenda for forestry research.

One was the finding contained in the National Forest Management Act (NFMA) amendments to RPA that "the new knowledge derived from coordinated public and private research programs will promote a sound technical and ecological base for effective management, use, and protection of the nation's renewable resources."

In July of that year, prior to passage of NFMA, the co-chairman of the Secretary of Agriculture's Agricultural Research Policy Committee (ARPAC) requested that the Forest Service prepare a plan and program for forest and rangeland research.

Then came the report by the Science, Research and Technology subcommittee of the Senate Committee on Science and Technology on its study of the agricultural research system. Though primarily addressing food research, several of its recommendations applied equally well to forest and range research:

- need for improved coordination among private and public research efforts;
- need to bring scientists from many disciplines together for interdisciplinary research;
- opening the agriculture research system to the entire scientific community.

Third, a number of commissions and organizations conducted their own reviews of the state

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of renewable resources and forestry, including The National Academy of Sciences, The Commission on Renewable Resources as Industrial Materials, the President's Panel on Timber and the Environment, the McIntire-Stennis Cooperative Research Advisory Committee, and the American Forestry Association. Among the problem areas singled out in their reports were the need for increased levels of funding, improved transfer of technology, better research coordination and increased emphasis on non-timber resources.

In response to all these inputs, a three-tiered national planning system was put into motion to generate actual policy alternatives for the 1980 RPA research program.* The planning system's main participants were the Association of State College and University Forestry Research Organizations (ASCUFRO), USDA's Science and Education Administration, and the Forest Service. Three conservation and user groups cooperated in planning and conducting the program: the Renewable Resources Foundation, a group of professional and scientific societies; the Forest Industries Council, representing the forest products industry; and the National Resources Council of America, a group of 40 conservation organizations spanning the spectrum from preservationist to wise-use philosophies and including such groups as the National Wildlife Federation, Wildlife Management Institute, Audubon Society, and Sierra Club.

The process began at the research working level with the scientist as a key participant. Each of four regional planning groups, coordinated by a National Planning Committee, made

* See, generally, Robert W. Harris, "Changing Concepts in Research Management" in Management of Forestry Research for Results, proceedings of the Third Meeting of Subject Group S6.06, International Union of Forest Research Organizations, High Wycombe, England, 1977. See also the comments of Orville Bentley and Richard A. Skok in National Program of Research for Forests and Associated Rangelands (USDA ARM-H-1), 1978, p. 67-69 (Bentley) and p. 33-35 (Skok).

preliminary projections of forest and range-land research direction and needs for 1980 and 1985. The Forest Service based its projections on the goals of the 1975 RPA Program. Forestry schools based projections on respective state and regional needs and on the research growth target articulated by Forest Service Deputy Chief Robert E. Buckman:

As a guideline, we feel that forestry school research funded by McIntire-Stennis must grow at twice the rate of Forest Service appropriations during the next two decades. And with matching funds, forestry school research dollars should equal the projected Forest Service Research budget by the year 2000--if research is to provide the answers to problems identified by the 1975 (RPA) Forest Service Assessment.

Once regional plans were drawn by researchers and administrators, four regional conferences were held to involve users and those affected by forestry research. These conferences provided a bridge from the research community to the public. Representatives of user groups, consumers and the general public were asked to help identify research needs and problems in research assignment, coordination and delivery of findings.

The problems of highest priority from each of the four regions were examined at a national conference of over 100 user delegates, university administrators, state and federal officials and conservation and scientific organizations. The delegates identified research problems of national concern and evaluated research policy.*

In a final step, seven national task forces met to evaluate results of the total planning effort. Composed of scientists and research administrators, the task forces identified 51 major areas that need increased research attention in the coming decade. Together with program projections of scientist/

* See, generally, the National Program of Research for Forests and Associated Rangelands (see note, p. 162).

years of work, these assessments provided the basis for the research component of the 1980 RPA Program.

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The national planning system produced projections of research needs for the Draft 1980 RPA Program's Alternative Three, a continuation of the 1975 RPA Program, which would provide for moderate outputs for all forest goods and services. These projections for Alternative Three were extrapolated to fit the other alternatives of the 1980 Program draft:

Alternative One provided for high investments in both commodity and noncommodity goods, services, and uses of forest and rangelands;

Alternative Two provided for levels of funding sufficient for only a custodial role for the Forest Service;

Alternative Four emphasized non-market goods and services, particularly dispersed recreation and wildlife; and

Alternative Five was a continuation of the current Forest Service program mix as determined by Congressional appropriations, and provided for moderate level commodity production and low-level programs for noncommodity uses.

The 1980 Draft Program identified the appropriate research role for each of these alternatives. For Alternative One, for example, research would focus on protection of resources under high-use levels and on minimizing conflicts between uses; for Alternative Two, research would be asked to provide information on "the judicious protection and use" of forest and range resources. For Alternative Four, which emphasized non-commodity resources, research would stress knowledge needed to provide market and non-market goods and activities simultaneously, while protecting productivity and environmental quality.

Client Needs and Satisfaction

The overall number of research users to whom the direction of forestry research planning has immediate or long-range significance

is impossible to estimate. The number of resource management professionals alone is estimated at about 200,000; to that must be added private landowners, resource-dependent industries, educators, students, legislators, citizen groups and homeowners. About 40 federal agencies rely at least to some extent on Forest Service research along with state, county and local agencies concerned with natural resources.

The best indication we have of what these research clients need is the more than 2,000 research problems, concerns and issues identified by the cross-section of government, professional, environmental and consumer organizations involved in the national and regional planning conferences.

How does the public react to the direction of the research effort? In the spring of 1979, during review of the RPA Assessment and Program, 1625 public responses were received, about 20 percent of them addressing research. Most commented on specific research areas and supported an increased research effort. Fewer than 5 percent opposed additional emphasis on research. Most of the public in this sampling seemed to prefer the high funding level (Alternative One) or the mid-level option (Alternative Three).

The Return From Research

Research produces the foundations for advancement in technology -- new knowledge and methodology. Traditionally these outputs have been reflected in numbers of publications, patents, symposia, workshops, guidelines for practice, new systems for using computers and a variety of inputs to the technology transfer process. With the advent of RPA and its requirements for cost-benefit analysis of investment opportunities, research managers have attempted to do a better job of describing the results of their programs. Since 1977 an attainment reporting system has been used in an attempt to identify benefits from research findings.

The Forest Service recently analyzed the benefits and cost of 81 selected past innovations from Forest Service Research as a way to evaluate what might happen in the future under the RPA Program. A team of scientists analyzed

each innovation to determine benefits accrued, costs incurred, and total time required. They found that at least half of the innovations produced benefits such as creation of income or employment, increased utilization of natural resources, or improved quality of environments. Forty to 50 percent of the cases created new or improved products, improved decision making, or reduced management or commodity costs. One-third of them generated income and cost savings through efficiency (Table A). About 1 in 5 produced new and higher-quality forest products; 1 in 10 brought in increased productivity; and 1 in 14 increased resource utilization.*

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Research Program Balance

When we speak of research balance we are actually talking about two distinct categories: first, the balance of basic research to applied research, and second, the relative priority placed on various subject areas.

In the first category, the structural balance within the Forest Service has remained surprisingly stable for many years -- basic research (31 percent), applied research (62 percent) and development (7 percent). However, this may be more a result of definition of terms than of a conscious decision to maintain balance.

As Assistant Secretary Cutler has emphasized, "We must give increasing attention to the basic sciences that undergird forestry." Many of the recent development and application programs have "used up" the storehouse of basic knowledge that has been "on the shelf" for years. RPA to date has had little impact on this concern in forestry research. Unless carefully monitored, the management emphasis of RPA could further drain off already scarce basic research resources into application and development. Fortunately the 1978 Renewable Resources Research Act authorizes competitive grants, as does Title XIV of the Act, to increase the supply of basic knowledge.

* Elwood L. Shafer and George H. Moeller in Benefits of Forestry Innovation (USDA/Forest Service) 1979, p. 9.

TABLE A

SUMMARY OF ALL BENEFITS FROM ALL INNOVATIONS*

<u>General Class of Benefit</u>	<u>Percent of All Benefits</u>
General income and cost savings through efficiency	33.8
Enhanced environmental quality	22.1
New and higher quality forest products	10.5
Improved policies and decisions	10.2
Increased utilization of resources	10.2
Increased productivity of resources	7.1
New scientific techniques and theories**	2.7
Enhance health and safety	
TOTAL	100.0

* Elwood L. Shafer and George H. Moeller in Benefits of Forestry Innovation (USDA/Forest Service) 1979, p. 9.

** Cases were selected for end products. "Basic Research" cases were not included in the analysis.

The second category of research balance--between subject areas chosen for research emphasis--has become an urgent concern because of increasing competition between uses of forest land. Distribution of research funding between the various functional activities has always been unbalanced. Forest Service research programs, for example, and forestry schools as well, have traditionally been timber-oriented. In 1978, 65 percent of Forest Service research aimed to improve timber management, to protect forests from insects, disease and fire, and to improve harvesting, processing and marketing of wood products. Only 8 percent of the research was allocated to outdoor recreation, wilderness and related environmental concerns (see Table B). "Research in [these areas] has lagged considerably behind research dealing directly with timber for far too long," said Assistant Secretary Cutler, "and a balance must be achieved."

Similarly, Tom Kimball of the National Wildlife Federation was prompted to exclaim "Right on" as he quoted from the recommendations of the January 1978 Renewable Resources Foundation Symposium in Washington, D.C.:

"The historic primary emphasis on timber management research needs to be modified to include greater relative emphasis on environmental/ecological, wildland other aspects of resource use."*

Further Research-RPA Roles

The Renewable Natural Resources Foundation, in its 1977 Evaluation of forest and rangeland research said "... with the management of renewable resources becoming increasingly sophisticated, there is serious question as to whether or not the present research system is adequate to meet current and future demands. Considering that forest and rangeland in the United States is approximately two-thirds of the land uses and that wood alone is

* A Review of Forest and Rangeland Research Policies in the United States, p. 4.

the basis of 6 percent of the economy, 1,500 scientist years is not very many. Its inadequacies are more than a matter of size, however."

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The Forest Service Research effort has suffered because, in the absence of clear natural resource objectives, it has been difficult to develop a balanced research program. Conversely, the absence of adequate research information has made it difficult to establish realistic renewable resource goals. Forest Service Research should seek to direct its programs toward supplying information for the goal-setting process in RPA and for improved integrated resources management. To accomplish this task, one of the greatest needs is an assessment of forest technology. RPA and Research leadership should give this high priority in the 1980s.

CONCLUSION

The real problems of research today are those of providing reliable information on needs, costs, benefits and time factors to the decision makers who establish funding levels.

The needs of forestry research as identified, and documented by the research community and users do not appear in the second RPA Assessment, and are not adequately represented in the 1980 Program. We have only begun to understand renewable resources, their complex interactions, and our professional opportunities in their management. A high priority for the next RPA should be an assessment of likely futures on all forest resources.

Competitive grant funding from the Science and Education Administration and Forest Service should be implemented to increase the basic knowledge needed to meet national renewable resource goals. However, since it is impossible to maintain a strong balanced staff of scientists on competitive grants alone, increased base funding under the McIntire-Stennis Act is essential.

Opportunities for building up larger, highly competent research staffs at fewer locations should be aggressively pursued to improve effectiveness and reduce fragmentation of research efforts.

TABLE B

Appropriations for Forest Service Research
by Item, Fiscal Year 1978

ITEM	AMOUNT
<u>Forest and Range Management Research</u>	
Trees and Timber Management	\$ 18,805,000
Forest Watershed Management	9,210,000
Range, Wildlife & Fish Habitat	8,277,000
Forest Recreation	3,191,000
Surface Environment and Mining	<u>2,635,000</u>
Subtotal	\$ 42,118,000
<u>Forest Protection Research</u>	
Fire and Atmospheric Sciences	9,308,000
Forest Insects and Diseases	<u>20,983,000</u>
Subtotal	\$ 30,291,000
<u>Forest Products and Engineering Research</u>	
Forest Products Utilization	12,555,000
Forest Engineering	<u>2,350,000</u>
Subtotal	\$ 14,905,000
<u>Forest Resource Economics Research</u>	
Renewable Resources Evaluation	13,761,000*
Renewable Resources Economics	<u>4,715,000</u>
Subtotal	\$ 18,476,000
<u>Research Construction</u>	2,674,000
<u>Total, Forest Research</u>	108,464,000**

* Includes funds for both resource assessments and for development of Forest Service programs as called for in the Forest and Rangeland Renewable Resources Planning Act of 1974.

** Not including an estimated \$700,000 of cooperative contributions from other organizations.

Controversy between research and resource management has long impeded research progress and application of results. The RPA process shows promise for improving this situation. Users and consumers can be involved effectively in determining research needs.

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PUBLIC PARTICIPATION IN RPA/NFMA

By Paul J. Culhane and H. Paul Friesema

The success of public challenges to Forest Service professional judgment in recent years has transformed the political climate of multiple-use management. The Forest and Rangelands Renewable Resources Planning Act of 1974 (RPA) and especially the National Forest Management Act of 1976 (NFMA) are themselves largely products of such public challenges, notably the controversy over clear-cutting. These laws expand the Forest Service planning program and include a very strong statutory mandate to involve the public in the planning process. That mandate encourages the Forest Service to channel public controversy into a regular and open, yet dispassionate, forum.

Public participation in RPA/NFMA planning is a complicated but learnable process, and it is very possible to come to understand it as you go along. Groups that do participate are likely to have a significant impact on Forest Service policies, for the agency is firmly committed to the process and seems genuinely anxious to make it work. How the Forest Service defines "making it work" may spark disagreement, but its need to be responsive--to actually change its plans on the basis of participation by the public--seems paramount.

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The complex RPA/NFMA planning process is in many ways the very model of rational-professional policy making. But since the planning process also requires compliance with the National Environmental Policy Act (NEPA) and a variety of public participation provisions, it can also be a fairly politicized method of policy making (11).*

Rational-professional policy making, NEPA compliance, and public participation are thoroughly intertwined in the land use planning process and are supposed to complement one another. Public participation also plays a key role in the logic of the regulations governing the planning process--"Public issues (and) management concerns" are to be "identified through public participation"; those issues and concerns are a major determinant of the process's "planning criteria" and of which planning alternatives are considered. The Forest Service's decision makers are required to select the recommended alternative for a plan on the basis of those criteria.** That is, Forest Service planners are almost legally required to be influenced by public participation.

THE PUBLIC PARTICIPATION PROCESS

The National Forest Management Act (1) contains a strong mandate for public participation in RPA/NFMA land management planning. However, though the Act states three times that public participation is required in planning, it offers few specifics. The Service's

* Numbers in parentheses refer to statutes, regulations, government documents and research studies listed at the end of this paper.

** See the NFMA regulations (2), sections 219.5 (c)(3), 219.5(f)(1)(iv), and 219.5(i).

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regulations implementing the Act* go into more detail, but still do not fully describe the role and process of public participation in land use planning for Forest Service officials and non-agency participants.

The lack of detailed legal guidance is not too critical, however. Public participation techniques used in land management planning already are largely part of the Forest Service's established standard operating procedures. Indeed, public participation became a major feature of National Forest management (as with most types of federal natural resources management) during the 1970s. Contemporary Forest Service public participation, often referred to as the "Inform and Involve" program, began officially in 1972, and has been applied to a wide variety of policy processes, including the "RARE" wilderness reviews, planning under the old "unit planning" system and actions requiring NEPA environmental statements. Procedures are spelled out in the "Inform and Involve" directive itself (6), the Forest Service Manual (4), and the Forest Service's "how to" handbook on public involvement (7).

There are two types of public participation--formal and informal. Both are important, but for different reasons.

Formal participation is advantageous because it is a systematic way for you to get your views about land use plans "on the record." The disadvantage is that it is conducted on the Forest Service's terms--you are playing on its court according to its rules.

Informal participation is minimally structured, however, so you are on relatively equal terms with the Forest Service. Everyone plays by the same loose rules governing when, where, and how to play. Moreover, the most effective participation strategy (the "informational" strategy discussed later in

* Primarily the regulations implementing section 6 of NFMA (2, section 219.7), but also the so called section 11 regulations (3).

this paper) and its corresponding relationships with the Forest Service (such as "prior consultation") work best in informal settings.

The Formal Public Participation Process

The key to understanding formal public participation is the relationship between the schedule of public activities and the sequence of planning steps involved at the National Forest, regional and national levels.* If this relationship were rigidly defined, the formal process would be easy to describe. However, the relationship may vary because the public participation schedule is supposed to be "appropriate to the area and people involved." Thus, the first step in the overall sequence for any plan is to determine both the internal Forest Service planning timetable and the schedule of public participation activities. To learn about the exact methods and schedule of public participation for a specific National Forest or regional plan, you must consult the media notice that signals the beginning of that planning sequence.

Public participation is not, however, so informal and unpredictable that you will be completely in the dark about public participation activities before you receive notice of the plan. If you understand the logic of RPA/NFMA planning and of the Forest Service's public participation program, you can anticipate roughly what kinds of events will be held and when.

* The formal participation process described in this section involves planning for National Forest System lands. RPA also affects the Forest Service's two other programs--Research, and State and Private Forestry. The participation techniques and tactics described later in this paper are just as applicable to planning in these two programs as they are to National Forest System land management planning. See also "Private Forests and the Public Interest" by Robert Dennis, and "RPA's Impact on Forestry Research," by Robert W. Harris, in this Guide.

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The regulations governing RPA/NFMA planning* require three general types of public participation activities. First, land use plans automatically require a NEPA environmental impact statement (EIS); the NEPA process, especially at the stage of public comment on the EIS, is itself a form of public participation.

Second, documents central to planning and participation must be made readily available to the public. At a minimum, relevant documents must be available at the Forest Service office where a particular plan is being developed. Previously approved plans--e.g., the national RPA program document and the regional plan, both of which affect National Forest planning--must be readily available at district rangers' offices** and public libraries.

Third, the planning team conducts various public participation activities--public meetings, workshops, surveys, and similar events--to "broaden the information base upon which land and resource management planning decisions are made." (2) This third type of participation begins with the publication of a media notice describing the type of plan, the geographic planning area, anticipated planning issues, the location of the key Forest Service planning officials and documents, and the nature and schedule of public participation activities.

The sequence of steps in the planning process is shown in Table 1. (The same general steps apply to both National Forest and regional plans.) Established regulations specify the nature of public participation activities for only a few steps--the media notice in step #1, the standard EIS procedures in steps #8 and #9a, and the appeals procedures in step #9b. The last two steps in the planning process, implementation and monitoring-evaluation, occur after the plan decision has been made, so the planning process's public participation efforts

* (2, §219.7; 3, §§216.5-216.6)

** Documents may be copied at the standard Forest Service reproduction fees.

technically do not extend to these steps. Thus, the appeals procedures of step #9b are the last official avenue for public participation.

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There are, however, several plausible scenarios that might require public participation on individual implementation decisions. Suppose, for example, that a National Forest plan indicated that a certain area was a potential winter sports site and that a developer later applied for a ski area permit. The decision process on the permit would probably include some form of public participation.

The new National Forest planning process under NFMA should decrease public participation on such individual decisions, however, since many decisions that formerly required public participation (e.g. timber management plans, wilderness management decisions, intensive grazing management plans, and ORV closures) are now supposed to be integrated into the land management planning process.

Although the planning regulations generally say that public participation should affect the whole planning process (steps #2 through #8 in Table 1), they specifically require public participation only during the period following release of the draft plan and EIS (step #8b). The Forest Service public involvement handbook (7) identifies 57 public participation techniques.* The familiar public meeting and its close cousin, the formal hearing, are two of them. Some techniques are variations on the standard public meeting, with the differences involving the size of the meeting (for example, the small group meeting), the use of props (for example, models with movable parts to simulate different alternatives), and

* This Forest Service handbook is one of the most comprehensive and instructive compendiums of public participation techniques available. We highly recommend it to anyone seriously interested in public participation in public lands or any other policy area.

Table 1 RELATIONSHIP OF STEPS IN PLANNING SEQUENCE TO PUBLIC PARTICIPATION PROCESS

<u>Planning Sequence Steps</u>	<u>Nature/Likelihood of Public Participation</u>
1. Planning team selection and beginning of process.	1a. PP events/schedule determination. 1b. Media notice.
2. Identification of issues concerns, and opportunities.	*2. Major PP point: public meeting, workshop, or similar event almost certain; multiple events/techniques possible.
3. Planning criteria preparation (based on RPA goals, public concerns, etc.; includes data analysis and decision criteria).	*3. Little or no formal PP likely.
4. Data/information inventory.	*4. Minimal, specialized PP (limited to gathering specific data).
5. Analysis of the management situation (technical demand-supply projections and feasibility analyses).	*5. Little or no formal PP likely.
6. Formulation of alternative resource output levels and associated FS programs/expenditures, to address objectives identified in step #2).	*6. Likely to be performed by FS plan team, though several possible PP techniques exist appropriate to this task.
7. Estimation of effects of alternative (benefit-cost, environmental, social, etc.; impact analyses of each alternative).	*7. Possible formal PP point; 11 FS PP techniques designed primarily to be used in conjunction with this task.
8a. Evaluation of alternatives (comparison of economic, physical, environmental, and social effects of the whole set of alternatives).	*8a. Likely to be performed by FS plan team with little or no formal PP.
8b. Release of draft EIS for public review; min. 90-day review period.	*8b. In addition to normal EIS comment process, formal PP activities required by Section 219.7(m) of planning regs (2).
9. Selection of alternative plan.	9a. Normal period for comment on final EIS. 9b. Appeals procedure for National Forest plans; request-for-Chief's-reconsideration procedure for regional plans.
10. Plan implementation.	10. Formal PP depends on nature of implementation action.
11. Monitoring and evaluation.	11. No formal PP likely.

* Steps at which nature of public participation activities will be indicated in the media notice for the particular planning process.

the degree of content structure imposed by meeting moderators (for instance, open-ended meetings versus meetings in which the agency presents a range of alternatives for reaction).

At the other end of the spectrum are some fairly exotic techniques, including use of a "participant observer" who lives (anthropologist-style) in a community for several months, computer simulations, role-playing exercises, and participatory television programs. Some indirect techniques, such as monitoring the media and the newsletters of interest groups, are even designed to obtain public input in an unobtrusive way, that is, without the public knowing that it is communicating with the agency.

The Forest Service specifies eight objectives of public participation techniques. Table 2 divides these into primary objectives, which relate to the role of public participation input in the policymaking process, and secondary objectives, which deal with improving the effectiveness of public participation. Many techniques can achieve more than one objective. For example, the standard public meeting is mainly useful for identifying important issues and public priorities and values, but the meeting's sign-in roster of attendees also permits identification of interested groups and individuals.

The distribution of techniques in Table 2 gives a clue to the likely prominence of public participation at different steps in the planning process. The two objectives with the most techniques -- the identification of key issues and public preferences -- are most appropriately used in step #2 of the planning sequence. Because of the importance of the information to be gained in step #2 for later steps in the planning process, some form of public participation is very likely at step #2. The third and fourth participation objectives, "predict . . . impacts" and "resolve conflicts," are most relevant later in the planning sequence. The techniques relevant to the "predict . . . impacts" objective are most useful at steps #7 and #8 in the planning sequence. Because step #8a leads to release of the draft plan/EIS, the impact-prediction

Table 2

OBJECTIVES OF FOREST SERVICE
PUBLIC PARTICIPATION TECHNIQUES

<u>Public Participation Objective*</u>	<u>Total No. of Relevant Techniques</u>	<u>Tech. Primarily Useful for This Objective</u>
PRIMARY	1. Identify key public issues (28)	27
	2. Identify public priorities and values (31)	32
	3. Predict social-physical project impacts (14)	15
	4. Resolve conflicts (28)	17
SECONDARY	5. Inventory groups and define key publics affected (16)	13
	6. Inform public about projected participation events and background information (10)	11
	7. Motivate publics to participate (9)	10
	8. Promote direct public interaction (29)	23
	Total	(148)**
		57

* Numbers in parentheses are the Forest Service's (7) listing of total numbers of appropriate techniques, while numbers to right reflect author's judgment.

** Many of the 57 techniques are counted more than once.

Table 3

IMPORTANT PUBLIC PARTICIPATION TECHNIQUES

Technique	Description
Public Meeting	Brief opening statement by officials, followed by statements by attendees and/or question-answer exchange between attendees and officials; semiformal format. (Several variations on meeting content, structure, and format.)
Public Hearing	More formal than public meeting; purpose is to receive oral and written statements for the hearing record (verbatim transcript); may involve sworn testimony.
Workshop	Meetings designed for interaction among attendees; often limited to selected invitees; attendees meet in small groups to work on specific issues, then present their findings to larger group; discussion is highly focused on specific issues.
Public Seminar	Meeting format involves organized talks/presentations by several interest group representatives, with each talk followed by a question-answer period; this is a debate conducted in a semi-teaching style.
Citizens Advisory Committee	An on-going group that meets at specified intervals (e.g., every three months); composed of key individuals and representatives of key groups; advises with and is consulted by agency line officers on a preestablished set of issues (usually grazing management).
Task Force	Group established to accomplish a specific objective, often technical (e.g., designing plan alternatives, predicting detailed impacts of plan/project); composed of well-informed people, often professionals; may be charged with stimulating more extensive public participation.
"Show-me" Trip	On-the-ground tour of site(s) of plan/project for key public participants, with informal question-answer dialog en route.
Working Session Retreat	Cloistered weekend meeting, with discussion of "position papers" among groups; designed to achieve consensus at end of retreat; preceded by survey, general meeting, and meetings with specific groups in preparation for the retreat itself.
Charette	Process in which participants agree beforehand to support the plan produced by the process; in most elaborate format, small groups propose objectives, objectives are developed into alternative plans, task groups analyze alternatives, and the charette participants come to agreement on the final proposal; time period ranges from weekend to 8 weeks.
Fishbowl Planning	Focus of process is brochure listing alternatives and each alternative's pros and cons; public meeting held to review alternatives; comments formed into additional alternatives, which are added to brochure and then analyzed by workshops; another public meeting is held, and the process repeated three times in attempt to forge consensus.
Delphi Panel	Questionnaire on plan goals is completed by key people; then responses, and reasons for responses, are described (anonymously); process of questionnaire completion and "response feedback" is repeated until consensus is reached.
Nominal Group Approach	Participants in small groups write down ideas about project; all ideas listed on a board, then discussed; silent writing process continues, with participants ranking ideas on index cards, and with results of second round of ideas and rankings shared with the group. Technique designed to foster creativity and place orally articulate people on equal footing with other participants.

Source: Forest Service (7)

techniques would logically be used at step #7 (since impacts would have to be predicted so they could be written into the EIS document).

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Conflict-resolution techniques are logically related to step #8b (and some, such as the use of an arbitrator or mediator, to step #9b). However, several sophisticated techniques primarily useful for conflict resolution really involve planning steps #6, formulation of alternatives, through #9, selection of consensus alternative.

For example, in "fishbowl planning", a brochure describing the pros and cons of each alternative is the focus of participation activities; new alternatives, plus their pros and cons, are added to the brochure in repeated cycles of planning steps #6 through #8a until a consensus emerges. Thus, if any conflict-resolution techniques are used, the participation event held after release of the draft EIS will probably be the official culmination (as opposed to the sole forum) of the technique's activities.

Just as it's impossible to say exactly when public participation will be used in steps #2 through #8, it's impossible to say exactly which public participation techniques the Forest Service will choose. The Forest Service (7) tells its officers that nine factors (such as the degree of polarization among participating groups and the public participation skills of planning staff members) affect the choice of participation techniques for specific situations. The standard public meeting, for instance, is not supposed to be used if participating groups are highly polarized (because meetings become rancorous and counterproductive). "Fishbowl planning" should be used only by a planning staff very skilled at public participation.

Nonetheless, the public meeting will probably be an important part of the process for most plans. Other techniques available to Forest Service planners are listed in Table 3. (Most of the 45 Forest Service participation techniques not described in Table 3 are used in preparation for or in conjunction with the listed techniques.)

Formal public participation processes and techniques attempt to obtain input to the planning process from a representative cross-section of the affected community and to structure the participation process around legitimate objectives (for example, obtaining specific types of information or achieving public consensus). Of course, before official public participation programs began, Forest Service officers still received input from the public. Through conversations or correspondence with individual users of the National Forests or associations of users, agency officers were educated--often quite forcefully--about the interests, beliefs, and preferences of different types of users. The problem with such individual contacts was that Forest Service officers heard the views of only a narrow segment of all the groups and individuals interested in the National Forests. Formal public participation activities basically try to give a wider range of voices access to Forest Service decision makers.

Informal Public Participation

While the formal public participation activities described above may be systematic and representative, and often very sophisticated, almost all professional interest group staffers agree that individual, informal contacts are the most effective way for groups to get their message across to decision makers. Whether it's a meeting at a ranger's office, a phone call, or a conversation at the back of the hall after a public meeting, the distinguishing characteristic of such informal public participation is that the participant deals with an agency officer on a one-to-one basis.

Formal public participation programs have not replaced informal contacts. (Some formal public participation techniques are even formalized variations on informal participation; the technique the Forest Service calls "interview key people" is an example.) Quite the contrary, informal lobbying can take place throughout the planning process from step #1a through #11. In fact, if a participant is not part of a given Forest Service decision maker's network of preexisting informal contacts, the major benefit of formal public participation events can be the access they provide to that informal network.

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Informal participation can occur at even highly technical or procedural steps in the planning sequence, such as #3, #4, #5 (the planning criteria preparation, inventory, and analysis of the management situation steps) and #1a (the determination of the public participation schedule). Because of the importance of these steps--the role of the demand/supply projections of step #5 in later evaluation of alternatives, for example, or the utility of structuring the participation schedule so it will be appropriate to a particular group--participants should be particularly aware of opportunities for informal lobbying in these steps.

These informal participation opportunities are not guaranteed to be effective (in contrast to formal public participation activities, where events are structured so that every participant's views are treated equally). Two factors seem to contribute to effective informal participation. One could be called professionalism. For a public participant this involves being well informed on the issues, technical facts, and procedures of the decision process at hand (so that agency officers think of the participant as an equal) and having interpersonal persuasive skills to get the message across accurately and without generating needless personal friction.

The second factor is legitimacy, the participant's right to speak for some valid interest wider than his own views. The most important factor in establishing legitimacy is being recognized as a representative of a Forest Service constituency. Local government officials, as elected representatives of communities adjacent to National Forests, and leaders of established interest groups have high legitimacy. Because of their expertise, professionals in relevant fields (e.g., a college professor of range management) also are considered very legitimate participants.

The NEPA Process

Regional and National Forest plans, as major federal actions that affect the environment, are accompanied by NEPA environmental impact statements. The NEPA process is now

governed by formal regulations issued by the Council on Environmental Quality in late 1978 (5). The Forest Service's NFMA/RPA provisions say generally that National Forest and regional planning processes must comply with CEQ's regulations. The NEPA process provides a specialized form of public participation--it requires agency decision makers to consider public comments on a plan's EIS before reaching their decision.

CEQ's 1978 regulations retained the basic elements of the EIS process. The agency releases a draft EIS that analyzes a range of alternative plans; the public comments on the draft EIS; then the agency prepares a final EIS, after which there is another period for public comment before official execution of the decision. Most requirements of this process dovetail well with RPA/NFMA. Both processes require interdisciplinary planning teams and consideration of a wide range of alternatives. The RPA/NFMA comment period is longer than the traditional minimum EIS comment period.

The 1978 CEQ regulations did, however, add a few new features to the NEPA process. The most publicized reform, the imposition of page limits (150 or 300 pages, depending on the EIS's complexity), should have little effect on Forest Service plans. Unit plan EIS's were usually well within the new page limits.

The most significant addition to the NEPA process is the new "scoping" procedure which is intended to identify the central issues that will be thoroughly and realistically analyzed in an EIS, and to eliminate the discussion of trivial issues. The scoping meeting, which occurs early in the EIS process, can structure the course of decision making in significant ways. However, the logic of RPA/NFMA planning --which emphasizes comprehensive and full analysis of all alternatives and consequences, even those identified late in the planning process -- runs counter to the intent of the scoping process, which is to limit the number of issues considered in the plan's EIS.

Nongovernmental public participants, including proponents and potential opponents of the proposal, are supposed to be invited to the

scoping meeting. The public meeting held at step #2 of the land use planning sequence, which is designed to identify important planning issues, will probably serve as the plan's scoping meeting. However, serious public participants are well advised to attend any separate scoping meeting if scoping is not on the agenda of one of the major public participation events held early in the planning process.

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THE FOREST SERVICE'S APPROACH TO PUBLIC PARTICIPATION

Participants in Forest Service land management planning processes should understand that the Forest Service officers look for certain things in public participation interactions. Public participation events can be viewed as arenas in which people interested in the National Forests "lobby" these officers. However, it would be a mistake to think they are pawns to be pushed about.

The Forest Service is one of the most highly professionalized agencies in the federal bureaucracy, and a key aspect of that professionalism is the very high degree to which Forest Service officers conform to agency policies and goals.* Because of this professional conformity, Forest Service officers have conscientiously implemented their agency's public participation policies--often with great skill. But Forest Service officers still conform to other agency policies and professional values, as well.

The professional and policy baggage Forest Service officers carry into public participation has two types of effects. First, the fact

* Forest Service professionalism is based on its officers' strong personal identification with the Forest Service and its organizational goals. The officers do not passively acquiesce to agency policies; rather, their personal beliefs tend to be the same as agency goals. This strong personal conformity is well described by Herbert Kaufman's classic study of Forest Service management (9); Kaufman's key arguments are as true today as they were 20 years ago.

that Forest Service officers are professional natural resource managers imposes some important constraints on public participation processes in which they are involved. At the same time, because they are also professional public administrators, Forest Service officers often use public participation as an active and creative tool in dealing with the agency's political environment.

Constraints on Public Participation

The most obvious constraint on public participation in Forest Service planning is that planning is affected by a host of preexisting policies. RPA/NFMA plans do not start as blank slates. They must conform to various statutes, court decisions interpreting those statutes, departmental and agency rules, RPA Program targets (in the case of regional plans), regional RPA targets (in the case of National Forest plans), and preexisting contractual obligations. Public participation processes are not free for example, to violate the grazing fee formula of the Public Rangelands Improvement Act, the 5-year reforestation requirement of the NFMA regulations, or an existing term permit for a ski area. However, preexisting policies often grant Forest Service officers considerable discretion to make decisions appropriate to local conditions. Restraints on decision makers' discretion often are fairly general and procedural, as opposed to substantive. (The NFMA and the Forest Service's "section 6 regulations" are examples of such reasonably discretionary policies.) Public concerns, as expressed in public participation events, are one very important type of local condition.

A more subtle but more important constraint than preexisting policy is the belief by Forest Service officers that comprehensive land management planning is a professional task for which they are ultimately responsible. One key principle of the turn-of-the century progressive conservation movement was that the public interest is best served when public resources are managed expertly by professional resource managers in public agencies. A corollary of this principle was that "special interest" influence is likely

to be antithetical to professional management in the public interest. Because the Forest Service is the prototype of a progressive conservation agency, its officers tend to distrust "special interest" pressures and to believe that they are themselves best qualified, by professional training and bureaucratic objectivity, to make key land management decisions. Public participation cuts against the grain of these beliefs.

Forest Service professionalism affects how receptive its officers are to different types of public participation inputs. Participation inputs fall into one of three types:*

- 1) Introduction of factual information or data. Example: a backcountry guide claims that all the camping sites on the High Valley Trail of the XYZ Wilderness show signs of heavy overuse.
- 2) Analysis of the logic or implications of alternatives. Example: a Sierra Club chapter president argues that a proposed plan to suggest little-used trails to visitors to ranger stations would be ineffective because only a small percentage of backcountry users ever visit Forest Service offices.
- 3) Expression of preference. Example: a wilderness study committee chairman believes something should be done about overuse of wilderness areas lest the very values that led to wilderness designation be ruined by recreational overuse.

The first two types of messages are most compatible with a Forest Service officer's sense of professionalism. These kinds of input are essentially the same kinds planning team members themselves make during the inventory (#4) and effects-estimation (#7) steps in the planning sequence. In fact, during the early years of public participation, Forest Service offi-

* The distinction is somewhat artificial since any participant's views are likely to encompass beliefs of all three types.

cers expected the public to generate primarily such factual and analytical information.

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RPA/NFMA planning is probably the most comprehensive decision making process in natural resource management. Since all National Forest uses fall within the purview of RPA/NFMA planning, the planning process must conform to a very complex body of legal requirements governing National Forest uses. And because key resource or functional plans (such as timber management plans) are incorporated into National Forest plans, the NFMA planning process must be technically sophisticated. Thus, despite the legal mandate that the Forest Service conduct planning and public participation in "plain English," one cannot escape being exposed to a good deal of technical jargon.

Forest Service policy making has always been a fairly technical process that is difficult for the layman to understand, and the data requirements of the RPA/NFMA process compound this difficulty. Anyone who doubts the complexity of comprehensive Forest Service planning should browse through the formidable Program document (8) from the first round of RPA planning in 1976. For this reason, public participants will find it especially difficult to provide factual and analytical inputs to the Forest Service's land management planning process.

Because of their self-image as professionals, Forest Service officers tend to be uncomfortable with the third type of participation input, expressions of preferences. Especially early in the agency's public participation program, field officers reacted negatively to this kind of input because they felt that being responsive to it smacked of "vote counting." Dealing with this kind of public participation, as one district ranger put it, in 1973, is "Congress's job, not the Forest Service's." There is considerable justification for such a view, according to the principles of American public administration.

The Forest Service's professional self-image has always been an ambiguous constraint, however. As a matter of law and administrative procedures, Forest Service line officers are

responsible for decisions about land use plans and other policy matters. They have the authority to sign and execute official decision documents while weighing various decision factors according to their best professional judgment. But responsibility also means that line officers are held accountable for the consequences of their decisions. Political fallout often occurs much sooner, while decision makers are still around to suffer from it, than many adverse physiographic consequences of Forest Service decisions. Moreover, Forest Service officers recognize that political hot water is often just as valid an indicator of a bad decision as a stream silted up by a poorly laid out timber sale.

The preference-expression type of public participation input is the best indicator of the kinds of public concerns that cannot be ignored without causing adverse public reactions. This type of message is the one most public participants come to a public meeting to deliver to the Forest Service. Whether they like it or not, Forest Service planners must receive such input to properly gauge the political consequences of their planning decisions. Thus, the Forest Service has come to accept the validity of expressions of preferences in the public participation process; the large number participation techniques designed to generate such expressions (categories 1 and 2 in Table 2) is an indication of such acceptance.

Given the strength of Forest Service professional views, it would be legitimate for public participants to wonder whether the nebulous, anticipatory considerations described above really affect Forest Service policy making. Although the statutory requirement for public participation and the logical role of participation in the NFMA planning regulations seem to give participants a legal, due process right to influence policy, it is practically impossible to use litigation to overturn a planning decision on the grounds that it appears to be at odds with the consensus of the plan's public participation record. But other forms of political flak (bad press, Congressional inquiries, etc.) operate under much more permissive rules than the courts, and such adverse

political reactions are a very real threat to Forest Service policy makers. Our research indicates that citizen interests, particularly as articulated in the public participation process, have a significant and demonstrable influence on even the most fundamental, local-level Forest Service decisions.

Creative Uses of Public Participation

Many Forest Service officers are professional public administrators as well as professional land managers, and professional public administrators are part politicians. Forest Service officers thus often try to use public participation programs in an active and creative way to enhance their agency's objectives. Some of the conflict-resolution techniques adopted by the agency, such as "charettes" and "fishbowl planning," are examples of such active use of public participation. These techniques are based on very sophisticated, modern theoretical approaches to management decision making.* But the more important active use of public participation is based on good old-fashioned bureaucratic politics.

Any group or individual can participate in Forest Service public participation activities. However, it can clearly be seen, for example, in the Forest Service's "Inform and Involve" directive (6), that public participation is designed to increase the access of certain groups, particularly environmentalists and recreationists, that have not enjoyed long-standing informal access to Forest

* As an aside, we are skeptical (based on our own and others' research into citizen participation in natural resources policy making) about the ability of such sophisticated techniques in and of themselves to overcome real public controversy.

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Service policymaking.* At its best, the "I&I" style of public participation is designed to develop good informal contacts with representatives of interest groups on all sides of a given Forest Service unit's political constituency. If conditions are right, such contacts provide the Forest Service with a balanced constituency that reinforces its multiple use mission. The agency's traditional clients in, for example, the forest products and livestock industries support the commodity use aspects of the multiple-use mission. However, these traditional clients cannot be relied on to provide strong political support for all aspects of the sustained yield policy, which is an integral part of the multiple-use mission. Environmental groups can be used as a "hammer," as a district ranger once put it, to get users to comply with resource-protection aspects of the multiple-use sustained-yield mission. Conversely, the Forest Service's traditional forest products and livestock industry clients help offset some of the more extreme preservationist and recreationist demands of the agency's new clients.

The use of public participation to achieve these political objectives can be a delicate balancing act, and is not appropriate in all situations. Some National Forests (and even a few Forest Service regional offices) have so few potential environmentalist-recreationist constituents that it is difficult for them to accomplish the constituency-balancing objectives of "I&I" participation. Since public participation adds little to the Forest Service's constituency in such circumstances, there is a

* The Forest Service also has had a long-standing interest in increasing the participation of consumers and minorities in its decision making. There is an equally long-standing history of nonparticipation by such groups (even by groups like Indians and Spanish Americans who have direct and obvious stakes in National Forest policies). We suspect that RPA will not change the situation much.

tendency for public participation to be under developed in constituencies consisting only of traditional user clients.

On the other hand, if a particular constituency contains both traditional and non-traditional clients but one or both sides are perceived as "extremists" (i.e., as making demands other participants consider extreme), a polarized situation can easily develop. Especially if Forest Service officers are impatient, a polarized situation makes any public participation difficult. A polarized situation can also become fairly ugly at the personal level. On one National Forest, on which RARE I wilderness review and timber management public meetings were particularly polarized, some Forest Service officers and industry and environmental leaders described their opponents as "environmental freaks," "paranoid," "goddam self-appointed guardians of the forests," and "nasty, unbusinesslike, and surly." It is fairly difficult to achieve the Forest Service's desired dual constituency objective in such an atmosphere. For these reasons, Forest Service officers view polarized constituencies with considerable fear and loathing.

Public Participation Strategies and Tactics

Students of interest groups suggest that there are four general strategies of group lobbying (10). A strategy is based on a set of assumptions about the nature of decision makers and the decision-making process; a set of tactics that are logically compatible with these assumptions is associated with each strategy.

Despite popular images of lobbyists as agents of "pressure groups," most lobbyists believe that the "informational" strategy is most effective, and they use that strategy's tactics most frequently. (The other three strategies will be discussed below.) The informational strategy is based on the assumption that decision makers are open-minded and the decision process open and fair, but that decision makers have inadequate information; thus, the task of the lobbyist is to provide the decision maker with the correct facts (as the lobbyist's group sees them) so the official

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can make the correct decision. As a general rule, the low-key informational strategy is particularly appropriate when dealing with administrative agency decision makers, since the norms of American public administration say bureaucrats should be nonpolitical, technical experts.

The informational strategy is especially appropriate for participants in the Forest Service planning process. Forest Service officers are not open-minded in the sense that they are ignorant about the issues involved in land use planning; in fact, they generally know more technical facts about planning issues than the average public participant. But Forest Service planners are open-minded and do lack full information about public preferences and concerns. (Recall that, as both a legal and a practical matter, land management plans must be responsive to public concerns and values.) And the public participation process is structurally open and fair. Moreover, since the informational style of group activity is the most low-keyed and professional, it dovetails well with Forest Service officers' professionalism and dual constituency objective.

"Informational" Participation Tactics

The objective of professional interest group lobbyists who use the informational approach is to develop and then use what we earlier called "informal" public participation contacts. The key informational tactic is, therefore, to initiate informal contacts with the relevant Forest Service decision makers. RPA/NFMA plans will be prepared by special planning teams organized for the sole purpose of conducting the planning process. It appears highly likely, because of the personnel requirements of agencywide planning, that these planning teams will be composed primarily of existing staff specialists at the particular Forest Service office (the supervisor's office for National Forest plans or the regional office for regional plans), as opposed to itinerant teams of planning specialists rotated from office to office.

Public participants should establish contact with two key members of the planning team. They should have a basic acquaintance with the planning team leader for issues of a policy nature, and a good working relationship with the team member covering their special area of interest (e.g., the range staffer if the participant is interested primarily in grazing or wildlife management) for more technical issues. Public participants will often find team members quite responsive to efforts to initiate informal contacts because the Forest Service, in the well-developed form of "I&I" public participation, consciously divides responsibility for dealing with key group leaders among appropriate staffers. That is, Forest Service planners may be actively looking for public participants at the same time the participants are trying to be found.

If a participant does not already know the relevant officials on the planning team and do not establish contact independently (i.e., by maneuvering to meet the official at an event unrelated to the land use planning process), there are several considerations to keep in mind in initiating informal contacts. On the one hand, contact initiation should be natural, since informal contacts are low-keyed and (on the surface) non-political. On the other hand, such contacts should be businesslike, since the key to the informational strategy is the official's perception of you as professional. One way to accomplish this is by calling the relevant planning staff member soon after publication of the plan's media notice and asking the staffer to mail some relevant (but available) document. This can be followed up by introducing oneself in person after the first formal participation event (e.g. a public meeting held at step #2 in the planning sequence).

The ultimate objective of informal participation is prior consultation on proposals or alternatives. In this situation, a Forest Service officer floats a trial balloon to obtain individuals' reactions before the proposal is made public. (A variant of the prior consultation procedure is one of the 57 formal participation techniques described in the Forest Service's public involvement handbook.) The agency's objective in prior consultation

is to find out if the proposal, or part of it, is so unacceptable that it should be modified before becoming a public position that could embarrass the agency. A trial balloon also helps the Forest Service convey what is and what is not implied by a proposal so that public reactions are not based on mistaken conclusions.

NOTES

Prior consultation has the same advantages for you that it does for the Forest Service: you may be able to head off an unacceptable proposal before the agency becomes publicly committed to it, and you are saved the inconvenience and awkwardness of becoming side-tracked by irrelevant issues. It is in prior consultation situations that informal participation's opportunities for candid yet business-like interactions are most useful.

Public Meeting and EIS Presentations

Informal participation contacts are not the only tactics in the informational strategy. Though they believe informal contacts to be more effective, professional interest group lobbyists say they spend more of their time in formal public participation activities--preparing statements for public meetings, commenting on EIS's, and so on--than in informal contacts (10).* Formal public participation tactics are necessary--a group's views have to be officially run up the flagpole.

Formal participation usually requires a certain amount of professionalism.** A typed

* This belief is not a valid indictment of the effectiveness of formal public participation. It is just as much easier to gauge the success of a limited, one-on-one contact, when a decision can be clearly related to your own input, than it is to judge the impact of your ideas after they have been thrown into the decision maker's pot with everyone else's.

** The exceptions to this rule are those participation techniques, such as the "nominal group approach" described in Table 3, that are structured by agency officials to place everyone on an equal footing.

copy of public meeting statements should be given to the meeting moderator; it ensures that comments are recorded accurately. Especially at public hearings and major public meetings, have a few extra copies on hand to give to other participants or news reporters.

These statements, and letters commenting on a plan's EIS, should be well organized, with important points or arguments clearly labelled. This is useful because of the Forest Service's standard procedure for analyzing public participation input. The Forest Service uses a "content analysis" methodology called "CODINVOLVE" to condense and tabulate public participants' statements. Forest Service coders underline a participant's key points, which become the raw data for later stages of CODINVOLVE analysis. In commenting on Forest Service EIS's, we have found it helpful to number each major point, summarize it in one or two sentences, and underline the summary sentences. This procedure minimizes the possibility of having comments misinterpreted or miscoded.

CODINVOLVE can sometimes undercut the use of professional, informational tactics. If the volume of public input is great, CODINVOLVE often fails to reflect the full flavor of public comments, especially comments by participants who are not "key people" of the particular office (such as regional group leaders' comments on the national RPA program document). Your thorough, subtle, brilliant analysis may be the 83rd input coded on a given day by a staffer who doesn't know you, and it may emerge as little more than a set of computer codes on a keypunch form. Such a situation is understandable, if unfortunate, but you must work on the assumption that yours will be the analysis that gets through the CODINVOLVE process intact to have an appropriate effect on the planning team member's deliberations.

Concentrate on factual and analytical arguments in informational-style written statements (or EIS comments). Early in the planning process, at about step #2 in the planning sequence, arguments should be pitched towards providing facts or data relevant to your group's concerns. Later, at steps #7 and #8, impact analysis arguments are more appropriate.

Try to work your preference-expression points into factual or analytical arguments. In the example we used earlier, the backcountry guide's decision to comment on wilderness use problems, rather than other issues, and his choice of language (e.g., "heavy overuse"), indicates that he is concerned about wilderness deterioration and wants the situation rectified. Detailed elaborations of philosophy (for example, free market and states' rights justifications for maximum provision of commodity outputs, or a recitation of John Muir's and Bob Marshall's romantic preservationist views of wilderness) are not very effective informational-style comments.

NOTES

As we've noted, the great complexity of RPA/NFMA planning makes it difficult to offer factual information and analytical comments. Essentially, one has to judge the importance of various issues and spend one's research and analysis time accordingly. For critical issues, you may want to push your preferred policies aggressively by collecting the necessary supporting documents and staking out a well-constructed advocacy position. For less critical issues, where a group does not have or can not afford definitive expertise, it is often enough to ask the right questions, and thus shift the burden of research and analysis to the Forest Service. By mastering the art of constructing good (even "loaded") questions, you can often make it hard for the decision maker to avoid giving you the answer you want to hear.

Written EIS comments and public meeting statements are important for two reasons. First, formal presentations get your views "on the record." Forest Service officers are officially required to consider the participation record as they make planning decisions. Getting the group's views on the record is especially important in land management planning because the Forest Service's regulations limit the right to appeal National Forest plan decisions to those who formally participated

in the planning process, and limit their appeals to issues they raised during their participation.*

Second, formal participation interactions are more than just one-way messages from you to agency planners. Agency officers can respond to public comments in many public meeting settings, and the agency is required to respond to comments on EIS's. Agency responses in the public participation record constitute a de facto set of commitments about a plan or project; strictly speaking, they are not contractual obligations enforceable in a court of law--just promises administrators must honor because they have given their word. If there is reason to be concerned about a proposal in which the Forest Service seems to have discretion to implement several significantly different options, try to narrow or eliminate the agency's options with well-phrased questions during public meetings or in EIS comments.

In both formal and informal dealings with the agency, the Forest Service's and other interest groups' positions and points of view should be understood and appreciated. One does not have to capitulate to others' points of view; just keep in mind that a message is most effective if it is constructed in the listener's language and from his perspective. The late David Comey, one of the environmental movement's most articulate lobbyists, once told a meeting of the Atomic Industrial Forum that British propaganda during World War II was much better than Nazi Germany's because British propaganda sounded believable to Germans while German propaganda sounded believable only to Nazis. RPA/NFMA planning is usually not as bitter as World War II propaganda blitzes, but keep Comey's point in mind.

* [2, §219.11(c)(4)] This limitation of appeal rights is a variant on the legal doctrine of "laches," which prohibits people from using litigation to redress a perceived wrong when they have passed up opportunities to protect their rights earlier in the sequence of events leading up to the decision to sue.

Leadership Roles in the Informational Strategy

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Your task may be more difficult than simply communicating your group's views to Forest Service planners. To deal with such a complicated process as RPA/NFMA planning, groups with similar interests (e.g., the environmental groups in a region or the various grazing associations operating on a National Forest) commonly join forces in informal coalitions. It is usually efficient in these cases to assign one group a lead role. Group leaders should be aware of two special problems of coalition management.

"Doing your homework." Since the goal of informational-style participation is to provide an agency with relevant information about the coalition's position, its technical sophistication has to be up to the requirements of the planning process. Being the "point man" for a coalition sharpens this responsibility. The coalition manager must know the documents and background materials affecting the plan well enough to see which issues are likely to be prominent in the planning process and what should be done to influence the course of decisions about them. For highly technical issues, professional assistance may be needed. If none of the groups in the coalition has a professional staff person (and most Forest-level groups do not), consult one on the staff of an affiliated regional or national interest group or try to recruit a professional person who has worked before on a "pro bono" basis with such groups.

"Getting your ducks in a row." The most important responsibility of a coalition manager is to coordinate the coalition's actions. It is an elementary but still sometimes neglected duty of leaders to be aware of differences of opinion among coalition members and resolve those differences or take them into account in dealing with an agency.

The most common task of a coalition coordinator is to obtain appropriate turnout of coalition members for public participation events. Appropriate turnout does not always mean mobilization of the rank-and-file to show up en masse for a meeting; some Forest Service participation techniques require only

a few well-informed representatives of each major participant group. It is difficult to mobilize members who are unaware of the relevance of a particular event; group meetings, newsletters, and so forth can keep members informed about land use planning issues.

Remember also that normal communication channels, such as newsletters or regularly scheduled meetings, are not enough to mobilize members on short notice. Many large-membership groups use a "phone tree" (a system in which certain members are responsible for telephoning their share of the total membership) in those cases.

Coalition leaders face a special problem in Forest Service land management planning. In RPA/ NFMA planning there are supposed to be very definite relationships between decisions embodied in higher-level plans and subsequent decisions in lower-level plans. For example, regional plans will be much more influential in setting targets for many National Forest outputs than in the old unit planning process (if the new RPA planning process works as expected).* Thus, local group leaders will have more opportunities to participate in a more comprehensive decision-making process, but local decision options may be much more constrained than in the past. Correspondingly, participants in national-level planning processes will want to know as they monitor implementation of the RPA program, the degree to which regional plans comply with relevant national RPA decisions. This situation creates an important incentive for cooperation and

* It remains to be seen whether the RPA plans will actually have this effect. The logic of the three tiered planning and control system runs afoul of the strong and longstanding Forest Service tradition that "on the ground" decisions should be made by on the ground professionals who are familiar with local conditions. Regional and national Forest Service officers, all of whom have been district rangers and supervisor's office staffers during their careers, understand this tradition.

coordination among groups with similar interests at the three levels.* Such coordination may be very difficult because the organizational abilities of various groups vary greatly at the three levels of RPA/NFMA planning. Some may be well represented in national RPA planning but poorly represented or not represented at all at the National Forest level, and vice-versa.

NOTES

The mix of public participants in regional planning is the hardest to predict. Since Forest Service regional offices are located in urban areas far from most National Forests, local groups accustomed to face-to-face dealings with the Forest Service will be at a disadvantage. For example, the venerable Appalachian Mountain Club, headquartered in Boston, will have to learn how to deal effectively with the Eastern Region office in Milwaukee. Only the forest products industry (which has industry association professional staff located near most Forest Service regional offices) currently is effectively organized to deal with the regional offices.

Some clues about future public involvement in regional RPA planning are provided by the federal government's regional planning commissions, particularly the Great Lakes Basin Commission (GLBC). The GLBC has had a difficult time stimulating public participation. Local groups often try to get the commission to incorporate their pet projects in the regional plan. Yet the commission must go to great lengths to maintain the interest of major groups in basin-wide issues. For example, the environmentalists participating in GLBC planning have not been the major environmental or organized sportsmen's groups, but the League of Women Voters, the American Association of University Women, and some

* An alternative to coordination would be for local groups to try to participate in both regional and Forest-level planning and for regional groups to try to monitor all 16 or so National Forest plans in the region. Many groups may end up doing precisely this.

activist university professors. If this is any indication, Forest Service regional planning may attract an unusual mix of participants, quite different from the mix at either the national or the National Forest level.

Non-Informational Participation Strategies

Three more strategies besides the informational ones are sometimes used by interest group lobbyists (10). The "constituency pressure" strategy assumes that decision makers are uninformed or do not have strong beliefs about an issue, and can thus be swayed by the appearance of strong constituency preferences on the issue. The "confrontation" strategy assumes that decision makers are miscreants whose misdeeds must be exposed to the cleansing light of public opinion. The "litigation" strategy assumes that regular government decision makers are biased against one's interests and that one can obtain a fair hearing only when protected by the courts' due process guarantees.

These three strategies are generally appropriate in settings other than administrative decision making: "Constituency pressure" is best used in certain kinds of legislative lobbying, "litigation" is naturally appropriate in judicial settings, and "confrontation" is perhaps most useful in attempting to change corporate policies. All three have drawbacks as participation strategies in Forest Service land use planning processes.

It is not definitionally wrong to mix constituency pressure tactics with informational participation tactics; indeed, many national interest groups that primarily use an informational strategy also use constituency pressure tactics in appropriate situations. One drawback to using a pure constituency pressure strategy on the Forest Service, however, is that the Forest Service has essentially beaten the group to the punch--the basic idea behind public participation is to find out what constituency preferences are about planning issues!

The main weakness of simple constituency pressure tactics, however, is that they would make sense only if Forest Service planners simply engaged in mindless "vote counting," an assumption that ignores the realities of Forest Service professionalism. The primary constituency pressure tactic, the letter-writing campaign, is difficult to conduct without its origins becoming transparent to decision makers. Officials become suspicious when they receive 300 postcards bearing identical messages, and devalue such input accordingly. Given this limitation, constituency pressure tactics are effective only when you operate under the assumptions, and use the tactics, of the informational strategy--presenting facts and reasoned arguments, doing your homework, and so forth. Thirty well-thought-out public meeting statements are infinitely more influential than 300 postcards.*

The primary drawback of the litigation strategy is that it happens after the fact. There are two litigation tactics, formal administrative appeals and resort to the courts. Both require legal counsel, and are thus expensive. Especially because of limitations imposed on appeal rights by the section 6 regulations, neither is a substitute for other kinds of public participation tactics.

Litigation tactics, moreover, are much more useful for opening agency decision making up to full, due process public participation than for obtaining reversals of specific decisions on the merits of the case. The case law

* It is not always easy for the Forest Service to pay greater attention to thorough statements than to quick-and-dirty items. For example, during the RARE II process the Forest Service was swamped by several hundred thousand inputs, many of which were coupons clipped from newspapers, form letters, petitions, and the like. The Service's RARE II staff strongly disliked having to treat such thoughtless input (which obviously came from groups' stimulated writing campaigns) as comparable in the CODINVOLVE evaluation process to the thousands of reasoned letters they received.

limitations on judicial review of most administrative decisions prohibit the courts from overturning decisions that are within the bounds of agency discretion and, in most cases, only allow the courts to ensure that the agency has compiled an adequate decision record and that the decision reached is not "arbitrary and capricious" when compared with that record.

NOTES

The confrontation strategy is probably the least useful in public participation. Pure confrontation tactics, such as protest demonstrations, are usually viewed by public administrators as highly illegitimate, and thus are likely to lead to considerable polarization and antagonism among all concerned. Protest tactics are most useful when the target decision maker is outside the reach of normal group influence. Greenpeace's confrontations with "pirate" whalers, for example, are probably as effective a means as any for dealing with such operators. But public participation offers so many opportunities for subtle and sophisticated influence that it seems a waste to squander them by using acrimonious confrontation tactics.

The disadvantages of these more extreme pressure tactics do not mean that they should be completely disowned. The desire of decision makers to avoid messy public controversies underlies their responsiveness to interest groups, so groups must be ready to use pressure tactics when necessary. The threat of litigation, vociferous public complaints, appeals to other government officials with some authority over Forest Service decisions, and other pressure tactics are the sledgehammers in the closet that keep Forest Service planners properly appreciative of the group's professional, informational approach.

SUMMARY

Two initial steps are important to becoming involved in public participation in the land use planning process. The first is to get the group on the appropriate mailing lists. Each National Forest and regional office will develop and maintain mailing lists of groups and individuals interested in the planning effort. Be sure to ask to receive all the relevant materials--announcements of meetings, press releases, preliminary draft

materials, and the plan/EIS documents themselves. Second, while requesting materials, begin to initiate informal contacts with the relevant Forest Service planners.

NOTES

Once one is involved in the planning-participation process, there are four general guidelines to be followed in using the professional, "informational" approach to public participation events:

- 1) Become familiar with the logic of the planning and participation processes in general, the interests and views of other key participating groups, and the factual background of the plan.
- 2) Write well-organized and well-thought-out-meeting and EIS comments, and ask penetrating questions.
- 3) Maintain liaison with like-minded groups that are participating in the same planning processes at the National Forest and regional levels, and perhaps even at the national level. A good amount of coordination and mutual reinforcement can be achieved by simply exchanging copies of letters and prepared testimony with these potential allies.
- 4) Most important, be alert to opportunities for informal public participation. As we noted earlier, involvement in formal settings is necessary and important, but it is in informal dealings with planners, especially in prior consultations, that group leaders can have the greatest influence on the Forest Service's land management decisions.

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FOREST SERVICE COORDINATION WITH STATES
AND LOCAL GOVERNMENTS

By Arthur Cooper, Robert Wise,
and William E. Shands

"It's becoming increasingly clear that National Forests have major impacts on the lands around them--on their value and their environment," said former Forest Service Chief John McGuire in 1979. "At the same time, National Forests are strongly affected by the uses to which adjacent and intermingled lands are put, and the effects are not always good. Conflicts are going to intensify unless our land management planning is coordinated with state and local planning and zoning."

McGuire's comment acknowledges a central fact: National Forests and grasslands, neighboring communities and adjacent private lands are tied together in a complex system of environmental, economic and social interactions.

In many parts of the country, for example, National Forests are the basis of local economies. Mills depend on the forests for substantial amounts of timber. Ranchers require forest range for their livestock. Changes in the management direction for those lands, or increases or reductions in timber and forage, can become critically important.

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In other places, such as Minnesota's Superior National Forest, and New Hampshire's White Mountain National Forest, forest-based tourism is an important economic activity. Forest lands also provide open space and recreation for local residents.

On the other hand, the federal lands may place demands on a local community--for example, to provide public services such as police and hospital space above that required by the town's residents. A number of small communities within forests find their physical expansion constrained by the public land (although the forest's presence may also help control a town's growth in a way that lessens a community's service costs). Development of a ski resort or mineral extraction on a National Forest may stimulate growth beyond a local jurisdiction's capacity to accommodate it. Even the construction of a campground can increase traffic on rural roads beyond levels for which they were originally designed.

But just as forest management affects its neighbors, so the National Forests are affected by activities in communities and on adjacent and nearby private land. A community's growth can boost demands for forest timber or range to fuel the community's economy, perhaps above a forest's sustained yield capacity.

Increased residential development on the forest fringe can increase the fire hazard. Building a second-home subdivision on a private parcel within a forest can increase the traffic on forest roads designed to accommodate only an occasional car or truck. Often these forest neighbors regard the public land as their "backyard." Some may take a proprietary interest in the land around them, objecting to trails or recreation uses that bring forest visitors to their neighborhood, or to timber harvesting that spoils their view. Others may actually use the public's land for outbuildings or as a storage area.

Basic resource interrelationships also require coordination. For example, while state wildlife agencies are responsible for most wildlife, the Forest Service manages the habitat on National Forest land or water: activity on one ownership--whether National Forest, state

land, or private land--can affect the amount and the quality of water flowing across ownership lines and political boundaries. The same is true of air pollution.

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Likewise, some kinds of development also spill across ownerships and even political boundaries. A typical example is the powerline or pipeline corridor; its point-to-point path often cuts across entire states.

Three national trends are of particular significance to these interjurisdictional interrelationships:

- An outward spread of population and industry away from the big cities and into the countryside, stimulating expansion of many small cities, towns and communities near the National Forests and grasslands.
- Increased local awareness of the economic importance of National Forest lands and resources previously taken for granted.
- Increased national interest in federal lands for open space and recreation, as well as commodity resource use.

All this argues for close coordination between the Forest Service, state agencies, and local governments.

Both federal and state governments have recognized that these interrelationships present issues which are both local and national in scope. For example, Paul Cunningham, of Idaho's Division of Financial Management says "Because of the preponderance of federal land in our state, the ripple effect of federal land management decisions is considerable. When a federal agency decided to make more timber available, local communities realize a certain amount of growth with its mixed blessings. Inadequate recreational facilities on federal land create a demand for state and local services as well as a proliferation of commercial enterprises that often conflict with the surrounding natural setting."

The Resources Planning Act, as amended by the National Forest Management Act, provides a mandate for coordination. However, it remained for Forest Service land and resources management planning regulations, completed in September, 1979, to provide specifics, in methods of coordination and actions required by Forest Service officials at the regional and National Forest levels.

THE ORIGINS OF COORDINATION

Congressional concern for better coordination of federal planning and management actions can be traced back at least a decade. The Public Land Law Review Commission's 1970 report, One Third of the Nation's Land, said "State and local governments should be given an effective role in federal agency land use planning." The report called for development of plans in consultation with state and local governments, circulation of the plans for comment, and their conformity with state and local zoning "to the maximum extent feasible."

Coordination was desirable, said the report, because state and local governments represent the "people and institutions...most directly affected by federal programs growing out of land use planning" and because "the objectives of land use planning can be frustrated unless all land within the planning area is included, regardless of ownership." The commission's report also proposed that funds be provided to public land states "to facilitate better and more comprehensive land use planning."

Although these recommendations have never been generally implemented, a number of Congressional actions represent efforts to implement more effective coordination. The so-called "federal consistency provisions", contained in both the national land use legislation, which failed to pass Congress in the mid-1970s, and the Coastal Zone Management Act of 1972 represent perhaps the strongest Congressional efforts to implement coordination.

The Coastal Zone Management Act encourages states to develop plans for the management of their coastal zones. Once these plans

have been approved by the federal government, then federal activities, development projects, and permit and license decisions shall be, to the maximum extent practicable, consistent with the state plan. This requirement clearly implies that development of the state plan will be coordinated with federal agencies and that the provisions of the state plan will be developed with the full knowledge and assistance of federal agencies. This provision remains largely untested and it is unclear whether this model for achieving local-state-federal government coordination is realistic.

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More benign requirements, at least from the federal perspective, are contained in RPA and in the Federal Land Policy and Management Act of 1976 (FLPMA) which provides primary direction to the Bureau of Land Management for its management of the public domain in its charge.*

THE RESOURCES PLANNING ACT

Although coordination of federal programs with those of other governments and private entities was a growing issue in 1974, there is little direct language in the original RPA concerning the subject. The statements that do appear are general and do not provide guidance about specific actions envisioned by Congress to coordinate various levels of government.

A major finding of RPA [Sec. 2(2)] is that "the public interest will be served by the Forest Service...in cooperation with other agencies, assessing the Nation's renewable resources...." In 1976, the National Forest Management Act amendments to RPA made coordination an element of National Forest planning. The amendments, which became Section 6 of RPA, require that land and resource management plans for units of

* FLPMA also requires that the Bureau of Land Management coordinate its resource management plans with those of states and local governments. The process it has developed closely parallels that of the Forest Service. In many cases in the West the same state and local officials will be dealing with both agencies.

the National Forest System be "coordinated with the land and resource management planning process of state and local governments and other federal agencies."

The legislative history of RPA and NFMA provides valuable insights into the expectations of Congress regarding coordination. The Senate Report on the RPA of 1974 expresses the intent of the coordination requirements of Sec. 6: "...National Forest System plans are to be coordinated with the land use planning processes of state, local and other federal agencies to the extent that they have such plans. This will prevent overlap and wasteful duplication. It will give the states a greater opportunity to be aware of the land use planning process within the National Forest System, and it will insure more effective coordination with this planning." It is also significant that in his comments on the conference report the law's chief author, Sen. Hubert H. Humphrey, stated that there it was the "duty" of the Secretary of Agriculture to consult with state and local governments "and give careful consideration to the impact of (National Forest) plans on state and local jurisdictions."

The Senate Conference Report on the National Forest Management Act says that the conferees "anticipate that the regulations (for land and resource planning)...will specify... the manner in which the expertise of affected state agencies will be obtained and used in the preparation of plans..." So it is clear that Congress intended that all planning done by the Forest Service be coordinated with states, local government, and other federal agencies in such a way that they are informed of proposed planning actions, allowed to participate in the actual planning process, and informed of alternative courses of action before management plans are adopted.

The Forest Service responded to this mandate in its planning regulations with a section on coordination [Sec. 219.8] and also added similar language to the Forest Service Manual.

THE REGULATIONS

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The most effective use of renewable resources results when policy development, planning, and administration are coordinated among the several levels of government and with the private sector. The planning regulations and the Forest Service Manual recognize this:

Efficient management of the resources of the National Forest System results from planning that is thoroughly coordinated among all levels of government, including other federal agencies, state and local governments, and Indian tribes. Such coordination ensures that government objectives, policies, and programs for resource management are compatible to the extent possible. Therefore, the Forest Service will coordinate its national, regional, and forest planning with the equivalent and related planning efforts of other federal agencies, state and local governments, and Indian tribes [36 CFR 219.8(a), FSM 1920.73b].

Coordination with other government entities, called "external coordination" in the Forest Service Manual, is intended to insure that planning includes [36 CFR 219.8(b)]:

- recognition of the objectives of other federal, state and local governments, and owners of intermingled and adjacent private lands, as expressed in their plans and policies;
- an assessment of the interrelated impacts of these plans and policies;
- a determination of how each Forest Service plan should deal with the impacts identified; and
- consideration, where conflicts are identified, of alternatives for their resolution.

Coordination with private individuals, interest groups, and other organizations will usually be carried out through public participation. In some cases, however, activities

on private lands may be of such importance to the management of National Forest lands--as when a large timber company owns extensive intermingled tracts--that special coordination will be required. This will be performed in conjunction with the program of coordination with states and local governments.

The RPA planning regulations and the Forest Service Manual contain the specific direction. Their provisions include: 1) giving of notice; 2) interaction with state governments; 3) coordination with owners of intermingled lands; 4) meetings at specified times with States, other federal agencies and Indian tribal governments; 5) appraisal of the relevant land and resource management plans of other government entities; 6) special coordination of research activities; and 7) continuing monitoring and evaluation of the cross-impacts of national forest management on adjacent or nearby lands and communities, and the neighbor's impact on the national forests. These requirements apply to the preparation, revision, or significant amendment of a regional or forest land and resource management plan.

Notice of Intent

Coordination begins with the giving of a notice of intent to prepare a revised plan [Sec. 219.8(c)] to the State A-95 Clearinghouse, to tribal or Alaska Native leaders whose lands may be affected, and to heads of county boards for counties that are involved. This notice will inform the key government officials that the Forest Service is initiating planning and is beginning preparation of an environmental impact statement for the preparation, revision, or significant amendment of a regional or National Forest plan. In fact, the notice will likely reach county governments near National Forests in two ways--through the regional planning entity that reviews A-95 circulations and by mail direct from the Forest Service.

State agencies and counties will probably have to take the initiative for coordination, however; the A-95 machinery in most states is not likely to cause the intensive and substantive discussions that are necessary to bring about real coordination and thus implement the intent of RPA.

Coordination and the Role of the States

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The substantive requirement for coordination with state governments, and through them with local governments, lies in the regulations' requirement that regional foresters seek agreements with governors on procedural issues related to the nature and timing of state government involvement in planning [Sec. 219.8 (d)].

The expectation is that in most states the governor will designate either a principal resource management or state planning official to serve as liaison to the Forest Service. It is reasonable to expect that the substantive state contributions to Forest Service planning will be through the designated official. This person should understand state issues and problems and their political dimensions. Further, the liaison official should be familiar with local government problems and sentiments to ensure that the concerns of local government are recognized in the planning process. Local governments may work either through the state liaison person or directly with Forest Service planners.

In the event that an agreement cannot be reached with a governor on a formal coordination process, the regional forester is still required to provide "an opportunity for governor and state agency review advice, and suggestion on guidance that the regional forester believes could affect or influence state government programs." Because of the imprecise nature of this requirement, and because of the discretion that it grants to the regional forester, it is to be hoped that states will recognize the importance of designating a liaison official and will make the designation promptly.

Meetings

The regulations envision systematic meetings of Forest Service planners and state officials. The Forest Service official responsible for development of a given plan is required [Sec. 219.8(e)] to meet with the designated state official, and representatives of other federal agencies and Indian tribal governments at three specified times during the planning process.

The first meeting is required at the beginning of the planning process to develop procedures for coordination. The second meeting must be held after public issues and management concerns have been identified and before recommendation of the selected alternative. The third meeting is the time at which state and local government representatives react to initial Forest Service planning, particularly the adequacy of inventory data and the thoroughness with which issues and management concerns have identified. At this time state and local officials also can express their views on the development and analysis of management alternatives.

Although the regulations require only three meetings with state and local officials, it is quite likely that other meetings will be held. The complexity of the issues being discussed, and the importance of coordination with other governments, requires that the Forest Service be thoroughly informed of state and local attitudes and preferences. The regulations and Forest Service Manual allow coordination conferences with state and local officials to be held as a part of other public participation activities, but only if the opportunity for such officials to participate is not reduced by such a combination.

In practice, it is unlikely that this alternative will prove attractive. The procedural economy that it represents will hardly be worthwhile in the face of the technical and political complexity of the issues that must be debated.

Sharing of Data

One important element of early coordination is the sharing of data on resources and social and economic issues. Many of those involved in Forest Service planning feel that inadequate resource data may prove to be one of the most serious limitations on competent planning. Because inventory data are often held by a variety of government or private interests, and because information networks for sharing such data are frequently imperfect, it is vital that working coordination between

planners for the Forest Service, their counterparts in state and local governments, and appropriate persons in the university community and the private sector be established as early as possible. Such coordination might identify sources of data that may not be known to the Forest Service. They also should ensure that comparable data bases in such key areas as population growth and economic development are used.

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Review of Plans and Policies

From a substantive point of view, perhaps the most important requirement is that the Forest Service review the planning and land use policies of other federal agencies, state and local governments, and Indian tribes [Sec. 219.8(f)]. This review must be appropriate in intensity to the planning level and requirements of a given plan. It should include not only plans for individual resources, such as minerals, forests, and the state fish and wildlife action plan, but also plans for pollution control, including water, air, and solid and toxic wastes, and plans relating to recreation, transportation, land use, and community growth and development.

This review should reveal how the actions, projects, and policies identified in such plans will affect the management of National Forest lands. Furthermore, regional and National Forest planning documents will discuss how proposed forest management alternatives will relate to the plans of other governmental units. The "record of planning" required by the regulations must document this review.

This Forest Service review is essential if Forest Service planners are to identify potential impacts of National Forest management on forest neighbors, as well as how that neighbors' activities affect the forest. Studies of federal land management programs have shown that although federal land managers generally recognize the threats to their lands from the failure of governments to coordinate their actions, they have a relatively low level of understanding of key state and local government

planning activities.* The requirement for review by the Forest Service of state and local plans is clearly designed to remedy this deficiency.

As noted earlier, coordination with individuals or private corporations sometimes is important enough that it must be carried out in the context of external coordination rather than as a part of the public participation effort. These are generally cases in which there are lands intermingled with, or dependent for access upon National Forest lands [Sec. 219.8(g)] and where management programs on these lands and on Forest Service lands may have significant cross-impacts. In such cases, the Forest Service must coordinate its planning activities, to the maximum extent feasible, with the other landowners. The results of this coordination must be included in the review of state and local resource management plans.

An additional dimension to the coordination process is provided by the requirement that the Forest Service ask other governmental units and universities for research help [Sec. 219.8(h)]. This is particularly important because of the wide array of research work and expertise available. Despite best efforts at research coordination, it is still a fact that the national research effort on management of the forest environment is poorly coordinated. It is vital, therefore, that Forest Service planners develop contacts with university researchers, and those of private concerns, to ensure that their expertise and research findings are included as management issues are debated and resolved.

Finally, coordination is included under the general monitoring requirements of RPA. The planning regulations [Sec. 219.8(i)] require that a program of monitoring and evaluation be conducted that "includes consideration of

* See William E. Shands, Federal Resource Lands and their Neighbors, (Washington, D.C.: The Conservation Foundation, 1979) 97pp.

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the effects of National Forest management on land, resources, and communities adjacent to or near the National Forest being planned and the effects upon National Forest management of activities on nearby lands managed by other federal or government agencies or under the jurisdiction of local governments."

In summary, the coordination requirements of RPA envision a continuing process of information sharing involving the Forest Service on the one hand and other federal, state, and local governments on the other. This process is to be initiated by the Forest Service and the responsibility for its continued viability rests on the Forest Service. The result will be regional or National Forest plans that reflect the information available from other governmental units, are aware of the plans of other governmental units and consider the mutual impacts of these plans on resources managed by the Forest Service.

NFMA's coordination requirements assume that states and local governments will develop effective long-range plans for resources management and land use. Often, Forest Service officials are frustrated by the absence of local land-use controls and the failure of states to exercise leadership in planning. The Forest Service planners must have something to coordinate with.

There will probably be substantial differences among states in their approaches to coordination. The law looks to the states for leadership in coordination through designation of a liaison official who will be the focus on the concerns and views of other state agencies and, if they wish, local governments. How coordination is handled by each state will depend upon governmental structure, state and local relationships, the nature of local land use planning and regulation, state land use programs, and the National Forest issues that are paramount.

The Congress has given the Forest Service its orders; the next move is up to the states and local governments. Both will find it to their benefit to develop a coordination strategy for working with the Forest Service planners.

A STRATEGY FOR COORDINATION

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Techniques of cooperation between the Forest Service and state and local government can take many forms. A few of the most important themes are highlighted here, including overall coordination plans and policies, public services and regulations. What follows is a checklist of basic ideas which can be expanded or developed to meet the needs of a state or local jurisdiction.

- Levels of planning. The Forest Service prepares long-range plans at the national, regional and forest levels. In order to provide adequate coordination for each planning level the Forest Service should develop a regular consultative process with national and regional groups representing state and local governments such as the National Governors' Association, National Association of Counties and the Western Governors' Policy Office.
- Officially designated contacts. To facilitate a system of coordination, each National Forest supervisor, local governing board and state governor should designate an official contact person for overall coordination. Using this technique the Forest Service would designate a lead staff person to funnel information from state and local governments for consideration by the Forest Services regional or National Forest planning teams. Conversely, each state and local government would be in a position to respond to a wide variety of requests for information and advice. For example, in Colorado, Governor Richard D. Lamm has designated the executive director of the Department of Natural Resources the state liaison with both the Forest Service and the Bureau of Land Management, while in Utah the state planning coordinator is the governor's lead representative.

- Memorandum of agreement. Under the new Forest Service planning regulations each governor will have the opportunity to negotiate a memorandum of agreement covering a variety of planning actions, such as plan timing, data needs, policies and citizen participation techniques. It is important for each agreement to be tailor-made to state and local circumstances. In Idaho, Montana, Colorado, and New Mexico, for example, existing memoranda of agreement cover a wide variety of coordination procedures between the state and the Forest Service or Bureau of Land Management. With promulgation of the new Forest Service planning regulations, these agreements probably should be updated to incorporate the coordination procedures of the regulations. It is desirable for these agreements to cover each phase of the National Forest planning process including:
 - identification of issues, concerns, and opportunities;
 - planning criteria;
 - inventory and data collection;
 - analysis of the management situation;
 - development and selection of alternatives;
 - implementation of the plan;
 - monitoring and evaluation; and
 - public participation.
- Planning timetables. Each regional forester should have an overall planning timetable for all forest lands and coordinate it with state and local planning efforts when appropriate. Conversely, state and local governments should develop an overall schedule for state agency plans and local development plans.

Idaho's Division of Community and Economic Affairs, for example, maintains an inventory of plans and schedules for state agencies, the Forest Service, Bureau of Land Management and local governments. The division can normally provide an accurate account of plan coordination opportunities.

- Joint planning and review teams. Another method of overall coordination is the formation of joint interdisciplinary planning or EIS staffs. Under this technique, state, local and federal agencies would undertake joint or coordinated planning and/ or environmental assessment activities. In planning for and assessing the impact of phosphate development in Southeast Idaho, for example, the state and federal agencies formed a joint task force to manage the activity. In Colorado, the Forest Service, the state and Gunnison County established a joint EIS review of a large molybdenum mining development, with the county as the lead agency. Colorado found this so successful, that it was made a routine procedure for dealing with projects affecting local, state and federal interests.
- Identification of issues, concerns and opportunities. Each affected state and local government could develop an annual agenda of issues, concerns and opportunities for each forest in the state for discussion with the Forest Service. Issues would vary widely but could cover such subjects as:
 - state water management;
 - enforcement of fish and game laws;
 - location of new Forest Service facilities;
 - state or local land use planning proposals;
 - large-scale development projects near the forests; and

- cooperative reforestation projects.

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- Planning criteria. Under the planning regulations, state and local plans and programs are considered appropriate planning criteria for the Forest Service. Each state and local government could inventory and make available to the Forest Service major plans of the state affecting the forests. State programs could also be analyzed to determine policies of the state or local government which would be useful criteria for forest planning.
- Inventory and collection of data. Two suggestions are made here which could substantially facilitate data coordination.

First, the Forest Service should, where possible, organize data by government boundaries so the data will be useful in strengthening state and local planning. Usually this will mean that Forest Service should classify data by county as well as by ecosystems, other physical features, or by ownerships.

Second, states, in order to provide leadership in overall data coordination, should establish state resource data centers that would provide access and coordination to state data and a means for influencing federal data collection and use. It may be possible for the Forest Service to encourage state data centers by contracting for services, assigning Intergovernment Personnel Act employees to the center, or forming consortia with states. For example, data centers which exist in Vermont, Minnesota, and Texas could organize or coordinate a wide variety of state and local data for use by state and federal agencies.

Many useful data systems already exist, including those sponsored by the Nature Conservancy, Bureau of the Census, and NASA--which could be valuable for forest planning.

- Analysis of management situation. The analysis of the forest's ability to supply goods and services can be valuable for state and local resource and economic development planning. This planning phase could lead to joint or collaborative efforts between the Forest Service, states and local governments to develop use and investment projections by adapting the Forest Service methodologies and analyses.
- Formulation and selection of alternative plans. The formulation, analysis, assessment, evaluation and selection of alternatives are crucial steps in planning for the National Forests and lands, and communities near them. A number of coordination steps are possible here. First, some joint public hearings may be appropriate with state and local agencies when planning cycles are closely coordinated in advance. Such procedures could provide a better forum for consideration of federal/state/local plans simultaneously. The EIS drafting and publication process also provides opportunities for coordination through joint staffing, scoping of the EIS and use of joint advisory or coordination committees.

This stage requires direct outreach to state and local governments through phone calls and visits so that alternative plans being pursued by each level of government can be identified.
- Plan implementation. This phase of activity holds great promise for greater intergovernmental cooperation. State and local governments plan for adjoining land, provide some essential public services on federal land, and finance a wide variety of resource management activities.
- Public services. It is realistic for the Forest Service to rely on state and local guidance in areas where the Forest Service has limited, if any, responsibility

including: health and social services, law enforcement, community development water resources management, public utility and energy policy, air and water quality, wildlife and major transportation facilities. In such areas it is important for the Forest Service to look to and expect guidance from state and local agencies.

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- Regulation of land development. States, and/or local governments often have programs to regulate land, housing and community development. In a number of states, local governments are required to develop and adopt local comprehensive plans governing subjects such as land use, public services and facilities, development codes, recreation and the local economy. For example, under Oregon's land use program the state and local governments are preparing one plan for each jurisdiction which can be used by the Forest Service as a state and local development guide for the area. It is possible for federal agencies to be signators to such plans.
- Capacity-building. Another possible area of cooperation is in improving the capacity of each level of government to perform effectively. A series of options exist here which could improve overall performance. First, the Forest Service should recognize that it is in its long-term best interest to foster more effective local and state planning. Inter-governmental Personnel Act staff, contracts, and joint action can foster improved federal/state/local relations. Too often the Forest Service opts for consultant-prepared plans rather than making the commitment needed to help local planning function well.
- Resource management. States especially have major resource management and investment programs which should be seen as opportunities for better management of federal and related lands. Alaska, for example has evolved a

whole variety of financing agencies to invest in renewable resources using temporary oil revenues. Many states, for example, from time to time undertake major reforestation efforts which might be more efficient if coordinated with the Forest Service reforestation programs and schedules.

- Monitoring and evaluation. Forest plans should include provisions to monitor and evaluate the quality of involvement by state and local governments in planning. In addition, special consultation procedures could be developed to build state and local governments into the regular monitoring and evaluation schedule for each forest.

RPA AND THE FOREST SERVICE

By Sally K. Fairfax

Since we do not yet know what kind of impact the RPA/NFMA laws will have on the U.S. Forest Service as an institution, this paper is necessarily speculative. It is also informal and, I hope, provocative. Some of my predictions will undoubtedly be wrong; in fact, I sincerely hope I am wrong throughout, since many of my prognostications involve major adverse change in an agency that has, by and large, been uniquely successful at managing and protecting the forests.

Nonetheless, I believe it is worth considering and worrying about these predictions because they raise fundamental issues about the RPA/NFMA process and because it will take real and concerted effort to avoid them.*

* While preparing this paper I had long and delightful conversations with familiar figures in the environmental movement, industry, education, and government. They include Henry J. Vaux, Professor Emeritus, College of Natural Resources, University of California, Berkeley; Michael McCloskey, Executive Director, Sierra Club, San Francisco; George Craig, Executive Vice President, Western Timber Association; and Zane Smith, Regional Forester, and Bob Cermak, Deputy Regional Forester for Resources, of the California Region. My colleague and frequent co-author, Gail Achterman, also had rich discussions with Murl Storms, former Director, Oregon State Office, Bureau of Land Management; Carl Stoltzenberg, Dean, School of Forestry, Oregon State University, Corvallis; William Hagenstein, Executive Director, Industrial Forestry Association, Portland; and William Larson, Vice President and General Manager, Champion International, Timberlands Division. If the process were solely in the hands of folks like these, I would happily conclude that we have nothing to fear.

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RPA/NFMA appears, at first glance, to be a near-perfect embodiment of the classic rational model of decision making: the decision maker sets goals, gathers all pertinent data regarding all the alternatives, their costs and benefits, and chooses the optimal course of action. The Forest Service and Congress clearly believe that what appears at first glance is in fact the case: that the RPA/NFMA process will result in more rational investment in and allocation of public resources. This view is shared by many who believe that RPA/NFMA will focus the planning process on the productive capacity of the land and will lead to agreement on output goals, thus assuring the accountability of both the agency and Congress for reasonable investment in the public forests.

My own view however, is less optimistic. Far from achieving a rational decision-making process, RPA/NFMA may well result in a stalemate and indecision as the Forest Service turns from managing the land to simply overseeing a convoluted, ever more complex set of Congressionally mandated procedures. The tradition of land stewardship, if indeed it survived the 1950s and 1960s, may have died in the 1970s. RPA/NFMA takes the initiative from experienced land managers--those problematic, imperfect, but appropriately revered people "on the ground," the folks who have lived with the land and their mistakes long enough to have developed wisdom and a capacity for judgment--and gives it to lawyers, computers, economists, and politically active special interest groups seeking to protect and enhance their own diverse positions.

This shift in initiative will result from the layers of legally binding procedure that RPA/NFMA has foisted on top of an already complex and overly rigid planning process. Constant procedural tinkering does not, I fear, lead to efficiency or simplicity. Rather it promises proliferation of steps, sub-steps, appendices and diverticulae that make the Forest Service susceptible to the ultimate lawyer's malaise, the reification of process over substance.

Because RPA/NFMA is a law, it bears all the earmarks of the increasingly intense legislative arena from whence it sprang. It is full of pre-meditatedly ambiguous and frequently contradictory

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compromises regarding both general principles and specific issues. It is almost totally structured by three post-Watergate canons of legislative action: Congressional reassertion of its central role in policy making; a related Congressional preoccupation with regaining authority over the budgetary process; and deference to that mystic ritual of "public involvement" as an alternative to Congressional goal or standard setting.

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RPA/NFMA is not a product of consensus but of heated conflict, and the conflict is reflected in vague statutory directives. Moreover, the meaning of the ambiguities will gradually and continually evolve in a series of public and semi-public spectacles: rule making, land management planning, development of manuals, guidelines, and generations of RPA Programs and Assessments. All of this will be seasoned and to some extent directed by appeal, litigation and further Congressional action.

Finally, a caveat is necessary before analyzing RPA/NFMA effects on the Forest Service as an institution. RPA/NFMA is not the only thing in the world at large, or the forestry field in particular, that will affect the Forest Service or National Forest management in the years to come. Nor is it necessarily even the most important. Most immediately, the increasing cost of housing, lumber, and wood products may have an incalculable, even decisive, impact on Forest Service planning. The energy crisis, inflation and interest rates, Indian land claims, and water allocation issues (Indian and otherwise) will all affect Forest Service planning. RPA/NFMA will be shaped by these and other forces and it will, to an extent, shape how they will affect Forest Service policy.

However, these factors also will have independent impacts, quite apart from RPA/NFMA. For example, although RPA/NFMA is frequently discussed in terms of increasing accountability, the rapid and continuing increase in the value of timber has focused increasing scrutiny and care on the handling of every truckload. Suffice it to say that we must be skeptical about attributing all subsequent changes in the Forest Service to RPA/NFMA, and we must avoid becoming so mesmerized by the implementation drama that we

fail to observe other, potentially more important events. The RPA/NFMA process will not vitiate or rise above such things as a 20 percent interest rate.

It is of little comfort to anyone who cares about the National Forests simply to stand on the sidelines analyzing and describing the demise of the Forest Service. I will therefore discuss first what I perceive to be the logical impacts of RPA/NFMA on the Forest Service as an institution and then proceed to proffer some mitigating factors, or as I have styled them below, silver linings of the cloudy predictions.

PLANNING AND THE LAW

Most discussion of RPA/NFMA has focused on the specific sections--marginal lands, species diversity, non-declining even flow, the size of harvest openings, and so forth. This emphasis overlooks the fact, already noted, that RPA/NFMA provides little meaningful direction on these issues. Most of its provisions are so vague they cannot be considered requirements, in the sense of a speed limit or an emission standard. The question of compliance--or more likely, non-compliance--with the Act will be difficult to raise and difficult to prove in a legal sense. No one predicts an end to litigation as a tool of resource decision making. But the days of easy court victories based on the claim that an environmental impact statement was inadequate, a relatively easy claim to support, are over. The courts' willingness to review, remand, overturn and generally discount agency expertise and discretion seems to have peaked and begun to subside. Litigation is, however, but a small part of the legal influence on resource management.

The crucial fact about RPA/NFMA as a law is not that it will lead to litigation, but rather that it has legalized the Forest Service planning process. This is not to suggest, although some might, that the process was previously illegal, but rather that what was once an agency-defined undertaking is now statutorily defined. The planning process was initially developed by the agency on its own terms to meet its own needs. By requiring planning as a matter of law, Congress has confused the process with the priorities, standards, and goals of the law, rather than those of planners or resource managers.

Occasional litigation, I am arguing, will be nowhere near as significant as the invasion of legal criteria and assumptions into resource management.

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RPA/NFMA constitutes a rather ill-considered admixture of legal assumptions, concepts and goals on the one hand, with technical, professional and ecological aspects of resource management on the other--all rolled into an uneven lump and pressed for both direction and legitimacy against the uncontrolled pull and haul of special interest group maneuvering and posturing. This is most assuredly not a planning process.

The major focus is on requiring foresters and planners to comply with formally established procedures in the forest as well as in the court-room. Making decisions according to the correct procedure becomes more important than making technically correct decisions. This is because the values of the law differ from, and at critical points war with, the goals of the planning process. The law emphasizes consistency, fairness, and reasonableness. There is nothing wrong with these concepts as goals, but they are not always compatible with the art of planning and management. For example, "reasonable" is typically defined in the law in terms of a "record" which will prove to a judge that all the relevant factors have been weighed by the decision maker. Without a record or adequate data to present to a court, a decision is unreasonable on its face. Judgment based on the wisdom of experience is not legally reasonable. Moreover, the lawyer is concerned with consistency; the legal process focuses on rules and standards, rather than on end results. Finally, the procedure defines independent units within the process, thus identifying routes of attack and defense and promoting adversarial relations. If the process thus defined results in substantively "good" decisions, it is a happy coincidence.

Planners, by contrast, are less interested in the consistency of decision making, or the demonstrable adequacy of the record on which it is based, than they are with its technical soundness and the likelihood of its implementation. They are focused less on process than on

outcomes. The planner's goal is to achieve politically and technically feasible decisions. Planning, in brief, emphasizes integration, judgment and discretion, whereas the legal mind presumes a world of adversaries and relies upon rules and routine, consistently and impartially followed.*

The RPA/NFMA statute makes relatively few rules, but it requires the Forest Service to promulgate reams of them. When the rules are finally announced, they are legally binding, and the Forest Service must comply with them. Everything the Forest Service does on the National Forests must be in accordance with plans formulated in compliance with rules. This will inevitably shift the focus from outcomes to process itself.

RULES, PROCEDURE, AND THE U.S. FOREST SERVICE

Rules and procedure do not necessarily, however, foretell the demise of an agency. Rules can be used effectively and procedure can be manipulated to protect agencies from real or imagined threats. But the Forest Service, for three prime reasons, is especially vulnerable to the procedural morass which the RPA/NFMA process could become. First, the Forest Service is an unusually coherent government agency, staffed by individuals who are profoundly committed to the agency and accustomed to team play. Some grouse, some dissent, and some quit, but when a decision is made, the troops generally rally and follow the leader. As an agency the Forest Service is, by tradition, most uncommonly apt to comply with, rather than resist or reformulate, commands.**

* See generally Guy Benveniste, The Controlled Society: Regulation and Planning in Environmental Politics (Boyd and Frasier Publishing Company, 1980).

** Herbert Kaufman noted this spirit and control in his classic study The Forest Ranger (Johns Hopkins University Press, 1960).

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Second, Forest Service personnel are (albeit with many notable exceptions) generally naive about the American political system and, more importantly, their role in it. They are less inclined than most to question or challenge Congressional directives. Part of this naivete results from the systematic miseducation of professional resource managers. For decades they have been told that their authority rests on apolitical technical competence. They do not make policy, they have been taught, nor should they become involved in the political process. They simply make technical decisions to implement the will of the people on the nation's forests. Thus misinformed, foresters are unlikely to second-guess a Congressional mandate and are generally unlikely to accept or fulfill their own critical--and highly political--role in defining, fleshing out, and redirecting legislative programs.

This reluctance by foresters to see themselves as political actors is heightened by the type of person attracted to the resource management professions. The Forest Service is staffed primarily by small-town folks who like to hike, fish, and hunt, and care little for smoke-filled rooms, especially in Washington.

Thus by both personal inclination and specific training, Forest Service personnel are unlikely to see themselves or their activities as political. This is not to suggest that the agency and its personnel do not occasionally engage in sophisticated, sometimes highly manipulative, political activities. However, they do not see such activites as either political or as manipulative. If they consider an activity to be political, they tend to want to stay out of it. Such personnel are unlikely to explore RPA/NFMA for potential political pitfalls or consciously to adopt strategies to minimize problems. They will stay on deck playing "Nearer My God to Thee" as the ship goes down, not because they think that ships sail better on the bottom, but because to do other than as ordered would be wrong.

Finally, the trauma of the last 10 to 15 years has made the Forest Service unusually compliance-oriented. The agency tradition described by Kaufman and others is not mincing, self-effacing or passive. Until recently the Forest Service has been quite aggressive,

imbued with a near-messianic sense of mission. The Forest Service strode confidently into the 1970s unable to believe it was no longer the apple of the public's eye, the leader of the conservation movement. Hence the Forest Service became the first victim and favorite target of the post-Earth Day environmentalist. As a result of this experience, the Forest Service seems less interested in protecting or enhancing its discretion than in avoiding unnecessary controversy. The agency seems more inclined to simply bow to pressure than to defend essential values or concepts. RPA/NFMA may be totally ill-conceived, but you won't hear Forest Service personnel saying so.

If we were talking about the U.S. Environmental Protection Agency or some of the other relatively chaotic, diverse, fragmented agencies of the federal government, I would not be nearly so lachrymose in predicting the likely impacts of a statutory scheme such as RPA/NFMA. However, all the virtues of the past, the unity, the direction, and the enthusiasm, become vulnerable when they are attuned to complying with a mind-boggling set of procedural requirements.

THE CLOUDS: SOME PREDICTIONS

The specific requirements of RPA/NFMA are vague, but they do impose a general framework of techniques and priorities that will have an important impact on the future of the Forest Service and all of those interested in forest policy. The likely institutional impacts will be discussed below under four headings: economic analysis, inventory and data processing, centralization, and the process.

Economic Analysis

The role of economics in Forest Service decision making was of central concern in the development of the RPA/NFMA planning program. The Acts require economic analysis of program alternatives and consideration of their economic consequences, but are not clear about the tests to be used and the extent to which any test at all should be applied. Even the NFMA regulations fail to provide a good idea of how "economic efficiency analysis" and concern with "goods and services" will actually be carried out in practice.

There is no doubt, however, that the Forest Service will be increasingly concerned with cost benefit analysis, interest rates, capital investment, economically dependent communities and rates of return. This inevitable change, mandated by the statute, worries many who fear that it will affect the decision making either by skewing Forest Service planning too much in the direction of outputs that have readily identifiable price tags or established markets or employment effects, or by requiring that benefits exceed costs for each and every proposed management practice.

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There are several good reasons why these fears may be unfounded. First, the Forest Service has traditionally been hostile to applying economic efficiency criteria to National Forest management. As William Larson, of Champion International, noted in an interview, even much of the industry did not analyze its forest management activities in such terms as rates of return until the early 1960s. Public forest management has been generally viewed as a public trust and foresters have not expected a return on investments in the traditional economic sense. The Forest Service now has begun to apply economic criteria, but there is continuing recognition that the National Forests still are a public resource which cannot and should not be managed on the basis of the same economic criteria as private timberlands.

Second, even if attempts are made to quantify values which many people regard as unquantifiable and then apply cost-benefit analysis to them, the results are generally rejected. No one accepts the quantification. So, rather than skewing decision making toward economically defined outputs, the other noneconomic outputs tend to operate as an independent, ever-present constraint on decision makers. Thus "outside" the established system for balancing and making trade-offs, it is arguable that the unquantified variables will be controlling to an extent not merited.

One change that might occur, however, as a result of increased emphasis on economic efficiency analysis is an influx of economists within the Forest Service. Some have actually suggested that the RPA/NFMA process will require

that there be at least one economist for every ranger district. While the agency may now need more economic expertise, the effect of shifting the hiring priorities and professional composition of the agency so far in one direction could be disastrous. Personnel ceilings are now so constraining, however, that this is a very slight risk.

One key aspect of the RPA/NFMA process requires Congress and the President to review a specific set of output goals for the National Forests and to either adopt those proposed by the Forest Service or to define and adopt an alternative. In succeeding years, Congress is supposed to fund up to the level necessary to achieve the adopted goals. Supporters of the RPA/NFMA process believe that this will at last make Congress accountable for National Forest management, just as a corporate board of directors would be after adopting a management proposal and budget. The Forest Service nursed the fond dream that it would do better in the budget process if it were able to tie its requests to hard data concerning trade-offs, outputs, and returns on investments. This hope was well-founded in such concerns by the Office of Management and Budget and Congressional committees.

To some extent, the process has been fruitful in these terms. Forest Service budget requests have fared better in Congress since the inception of the RPA/NFMA planning cycle, particularly supplemental appropriation requests. However, the inherently competitive situation between the administration and Congress will not yield much to the rational model. Nor will RPA/NFMA data alter the politics of budget priorities much.

A recent lawsuit illustrates these harsh realities. The National Wildlife Federation brought a suit attempting to force budgetary accountability by insisting that Congress could not fund timber management at a higher percentage of the recommended RPA level than other management programs like wildlife and recreation. The NWF suit was dismissed with a thud. The court recognized its own nearly nonexistent role in reshuffling the politics of the budgetary process. No amount of data or nominal Presidential

and Congressional commitment to particular program goals will significantly alter basic givens. Moreover, funds gained by agencies from Congress often cannot be used because of administratively imposed ceilings, so that even if additional funding is available, it may not be used efficiently.

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Finally, the budgetary tie-in has, in fact, exacerbated the concern of many amenity interests about the economic emphasis in the planning process. The orientation of the Office of Management and Budget, the Committee on Wage and Price Stabilization and many in Congress towards curbing inflation, controlling the cost of housing, and getting an adequate return on public dollars invested further raises the fear that timber production will dominate the National Forests.

Inventory/Data Processing

Virtually every step of the RPA/NFMA planning process is sheathed in inventories and analyses of every conceivable ecological, sociological, and biological parameter of every conceivable resource: wildlife, water, soils, trees, cultural, historical, and so on. This emphasis on data gathering is a fundamental part of the rational decision-making model, yet it poses very real questions about how much data can actually be used effectively in decision making, the institutional effect of the necessary reliance on computers, and the impact on the focus of decision making itself.

The first question that must be addressed is how much information can actually be used. Private timber companies generally allow field-level managers to define their own data needs by focusing on information they think they need to do their jobs. The farther one goes up the management hierarchy, the less detailed information is needed or available. Upper management concerns itself primarily with making sure the field-level information is additive and accurate. In contrast, under the RPA/ NFMA system vast amounts of data are required--often, it seems, to plug into overall systems models designed by upper management staff. Too little attention appears to be given to whether this information will be useful to on-the-ground decision makers.

It is not at all clear that vast amounts of data are useful to decision makers at any level. Technical data are only one component of good judgment, and there are limits to how much any person or group can understand or use. However, the RPA/NFMA process requires that enormous amounts of agency time and money go into information systems of questionable or marginal utility.

RPA/NFMA requires the collection, storage, manipulation and circulation of heretofore literally unthinkable amounts of data. This leaves the Forest Service with no choice but to rely heavily on computer technology. The implications of computerization are extremely important for the Forest Service and reflect on the other issues identified above. First, data possess an authority that tends to vastly outstrip its utility or inherent good sense. This is particularly true when the computer hardware and programs achieve sophistication out of proportion to the data. For example, data often amount only to best guesses and approximations gathered on the district or fabricated in Washington. When data are aggregated, disaggregated, extended, extrapolated, curved, spiraled, spooled, spurtled, and coughed out again to be applied to a specific forest to which they may never have related, serious problems may result.

As Carl Stoltzenberg, of Oregon State University observes, data gathering and forest inventory methods have changed very little in the past several decades, while our ability to manipulate data has developed tremendously. That ability vastly outstrips our ability to understand the implications of our assumptions or the ramifications of our inadequate data. Invariably, this leads to serious problems in making decisions based on the models; the entire system, while projecting the impression of certainty, is plagued by the familiar "garbage in, garbage out" problem.

There is also a very real danger that massive inventory information may tempt the Forest Service--which is still struggling to lay down the costly burden of what Dick Behan has called

"the myth of the omnipotent forester"**--to reassert a specious authority over the value questions of land management. Data seduce as well as confuse. It would be understandable and altogether unfortunate if agency personnel, hard-pressed to make difficult trade-offs in the face of complex, unmeetable demands, simplify their tasks by invoking the mystique of the data. Piles of numbers that may or may not mean anything could lead to a repackaging of the myth of omnipotence with the idea that "the data made me do it."

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The dangers posed by the data orientation of RPA/NFMA go beyond the problems of utilizing data effectively in decision making. The sheer volume of the data required portends a dramatic shift in agency activities that may move land management decision making away from the land. Although RPA/NFMA authorizes the expenditure of funds for data collection and circulation, there has not been and probably will not be an increase in personnel ceilings in proportion to the extra work force required to amass and process the data.

It seems almost unavoidable that, whether titles and positions reflect the shifts or not, the major decision-making authority within the agency will slip to the computer technicians. They have already become central actors in the planning procedure, since they define the models into which the data must fit. This preordains a more subtle shift: that fundamental program definition is carried out by the youngest and least experienced personnel in the agency, since they are the ones trained in computer and systems analysis skills. Unfortunately, this means that those who have a storehouse of wisdom, experience, and personal contact with the land, and who have lived long enough to have some perspective on their pet theories and enthusiasms, will play a smaller role.

Furthermore, the data bank created by the RPA/NFMA process is a major impetus to centra-

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lized decision making, which further removes decision making from the land. Tradition tells us that in the Forest Service authority is disaggregated, exercised at the district level, where decisions can be contoured to local ecological and socioeconomic conditions. One can debate the precise extent to which this tale is or was accurate, but RPA/NFMA may end it entirely. Whatever one may think of the traditional model, it is certainly true that the Chief depended on the regional forester and the regional forester depended on the local supervisor and rangers for information.

The data inventory orientation of RPA/NFMA eliminates this local advantage in data access, and may in fact reverse it. All levels of decision makers will have equal access to data through computer terminals. In fact, to the extent that the regional and national levels understand data manipulation better than the districts and forests, the on-the-ground personnel will be absolutely rather than relatively disadvantaged.

Finally, the data/inventory emphasis may thwart citizen involvement efforts. Computer technology and linear programming express the bulk of the assumptions, judgments and decisions in numbers and formulas. This is, wittingly or not, a form of concealment. Most people do not understand and cannot evaluate the decisions made in translating the information and assumptions into numbers. The public and agency decision makers are equally confounded by this situation. A concerned citizen wanting to know why or how something was decided cannot be expected to analyze and understand the assumptions underlying a computer model. All of us have heard some variant on the district ranger's plaintive plea, "The computer says there are another million board feet out there, but I'm damned if I know where they are." When the concerned citizen goes away frustrated and hostile, nothing good can result.

Centralization

The nature and magnitude of data overload is only one of the centralizing tendencies in the RPA/NFMA process. It is worth noting that the process was meant to be centralizing.

A major priority of the environmental movement of the last decade has been the development of legally enforceable national standards for public land management. Both aspects of this goal--the national focus and the emphasis on legal redress--have tended to centralize decision making. Moreover, the whole idea of a national assessment and program embodied in the Resources Planning Act is an impressive expression of faith in the utility of Congressional--hence centralized--planning and budgeting.

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The idea of national goals, disaggregated and parcelled out to regions and forests for achievement, is the perfect embodiment of top-down planning and it was intended to be so. The Forest Service would have us believe that ultimately the national plan will reflect the aggregated potential of the forests and regions, and hence in fact constitute bottom-up planning. That hopeful view assumes that Congress and the President will tailor their programs to Forest Service recommendations, alternatives, and data--an outcome for which there is limited historical precedent. Moreover, it assumes that there will be limited or zero distortion in the data as it is aggregated and disaggregated, which seems an unrealistic hope at best. Thus, although the Forest Service clings to the fond hope that RPA/NFMA will not argue a dramatic geographic shift in power within the agency, much of the political pressure and specific intent of the program is in the opposite direction.

The top-down profile of the planning process is accentuated by the layers of regulations that surround it.* The NFMA planning regulations promulgated in September 1979 are the precursors of more detailed and binding regulations on specific subjects--such as economic analysis--at the regional level. This morass of mandated goals, analyses, criteria, concerns, and procedures seems not merely tedious but fatal to local initiative, judgment, and creativity. The fact that each of the numerous steps along the way can give rise to an appeal or a stay simply confounds the stupefying effect.

* See "Regional and National Forest Planning" in this Guide for a detailed description and analysis of these regulations.

There are some who feel that the regional offices will emerge from the foregoing as the center of power in Forest Service decision making. While it is generally conceded in almost every quarter that the National Forest and District offices will be the big losers, there is no reason to assume that power will gravitate to the regions. The regional foresters are few in number and therefore relatively easy to consult on general policy decisions, and the regional offices house the agency's most intense and sophisticated analytic capabilities. However, while suggestive, these points do not seem decisive. A more likely alternative scenario is one in which authority slips not to the regional forester, or even to the Chief, but out of the Forest Service altogether.

First, because litigation, regulations, and appeals require lawyers, the Office of General Counsel in the Office of the Secretary of Agriculture has exercised extraordinary policy-making authority and likely will continue to do so. More significant, however, is the potential for comprehensive involvement of other executive branch officials. Until quite recently, the Forest Service was operated largely as an independent agency of government. This enviable position stemmed, in the opinion of many observers, from a confluence of unusual circumstances: the fact that the Forest Service budget was reviewed by Interior, rather than Agriculture, appropriations committees in Congress; the disjunction between the Secretary of Agriculture's normal farm-related concerns and constituencies and Forest Service programs; and the solid support from a strong constituency that the Forest Service has long enjoyed.

Before the incumbent, Assistant Secretaries in charge of Forest Service matters have typically known little and interfered little in Forest Service doings. The maelstrom of public oratory over clear-cutting and the multi-faceted RARE II debacle have significantly altered the Forest Service's position in the Department of Agriculture. Moreover, through the RPA/NFMA process, the same data that will bind the Chief will be readily available at the Secretarial level. Given increased public attention to forest management and the increased political and economic value of the resources involved,

it seems highly unlikely that the centralization of power will stop at the regional level. For good or ill, it seems virtually inevitable that centralization will lead to vastly increased Secretarial level and White House involvement in Forest Service planning.

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The Process

Centralization of decision-making authority is not the only politicizing impact of RPA/NFMA. It seems quite apparent that Forest Service personnel from now on will focus their efforts on managing a process and will manage the land only as a secondary or derived activity. Moreover, because public involvement--rather than any particular management goals or criteria--provides the fundamental standards of RPA/NFMA, the position of manager of the process looks more like that of a broker than that of a decision maker.

Rather than the epitome of the rational decision-making model, upon study and reflection RPA/NFMA emerges as quite the contrary: a complex process which has confused the rational model, heightening its unreality by transforming each phase of the undertaking from a rational activity to a series of negotiated settlements among organized special interests.

The unique and problematic role of the public in RPA/NFMA can be distinguished from apparently similar public opportunities under the Administrative Procedures Act and NEPA. Under the APA, the public was to comment on proposals for rules made by the agencies and the record created was used primarily to assure the reasonableness of the agency's decision. Under NEPA, 25 years later, the public was urged to help define alternatives and otherwise contribute to an affirmative packet which would be available to decision makers at all levels. Under RPA/NFMA the documents and the decisions are virtually synonymous and the public is involved at every step of the lengthy process.

Layers of Programs, Assessments, procedures, and guidelines plans make it easy for officials to avoid making decisions. What is less frequently understood is that the RPA/NFMA public participation process virtually precludes "the responsible official" from making decisions, even though he is charged, by law to do so. The staff

function of gathering data and assessing alternatives is so hopelessly tangled with the political mollification/compromise/education function that it becomes extremely difficult for the line official to act except as dictated by the staff analysis. But the staff "analysis" is negotiated top-to-bottom with special interest groups. Confronted with a fait accompli, there seems to be little left for the district ranger to do but take the heat.

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This situation cannot, unfortunately, be presumed to be mitigated by any unifying good sense or professional competence in the agency's own planners. All of the problems with the excessive data, occult analyses and imposed-from-above goals are exacerbated by the fact that the agency is required to adopt an explicitly barteral mode of operation among a statutorily mandated set of diverse disciplines.

Interdisciplinary team planning has been seized upon with almost the same degree of uncritical enthusiasm as initially greeted the public involvement idea, ombudsmen, sunshine laws, and any number of similar trendy schemes which sweep through government and academe like occasional outbursts of chickenpox. The marginal utility of interdisciplinary planning was reached, in the Forest Service and elsewhere, long before it was enthroned in RPA/NFMA. NEPA was supposed to herald a new era of interdisciplinary analysis and, if we can believe the Council on Environmental Quality, the Forest Service did unusually well with the idea. Now we are starting anew, which leads me to believe we are simply reiterating without generating any light.

This is not surprising. Interdisciplinary work is extremely difficult to administer and rarely does the whole even approximate the sum of the parts. The result all too often verifies philosopher Allan Sherman's observation that, "A camel is a horse that was designed by a committee."

Yet creating a whole string of camels has become, following RPA/NEMA, the major function of the U.S. Forest Service. The staff function will consist, as near as I can figure, exclusively of gathering data and analyzing it pursuant to the constantly iterating process, and

the decision maker will be limited to actions analyzed therein. Wisdom, judgment, responsibility, creativity, and initiative are sacrificed to the least common denominator in the hopes of achieving an accomodation which, if not in the public interest, is at least defensible should anyone decide to sue.

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SILVER LININGS

My own reaction to RPA/NFMA is that this is about as naked an emperor as we are ever going to confront. Nobody's laughing or discussing the haberdashery, however, because they are all apparently still hoping that they can control the creature. Although I am not sure it can be controlled, I am willing to admit that there are some grounds for arguing it's worth trying. The most obvious point is, of course, that we are all in this mess so we might as well stop griping and get on with it. The logic of that is compelling, even if the empirical base is not promising. There are, however, other points to be made against my gloom-and-doom scenario.

First, it is important not to confuse start-up problems with long-term difficulties. Any new system is bound to be full of glitches and easy to burlesque. It is frequently argued--and certainly possible--that after several iterations the data flow will be established and the participants, having been reassured by the results, will be less noogy about the process.

It is also possible that I, in a state of near-perfect ignorance about computer technology, attack it like a Luddite. Some observers are quite sincere, for example, when they say that the data processing syndrome is one which the Forest Service has already survived.* This is one seductive sweet meat that the agency has tasted and learned to keep at arm's length. Whereas several years ago they feared the agency was in danger of succumbing to a computer fixation, now they believe they have enough experience in dealing with it that they will "drive the data, not be driven by it."

* I am speaking in particular here of Zane Smith and Bob Cermak of the California Region.

It is also argued that the interdisciplinary planning team concept, if not a perfect format for actual planning, does diversify the intellectual tools available to the agency. Long a mental monoculture, the Forest Service is unusually in need of more diverse views. Diversity notwithstanding, it is certainly true that enough of the good old Forest Service hubba hubba remains to meld free thinkers into an effective team.

This ultimately is the agency's best hope for surviving RPA/NFMA. With or without the legislation there are certain concepts and commitments that endure. No one can avoid hard trade-offs, lawyers, rising costs, computer jocks, political heat or ambiguity. But the Forest Service, because as individuals and as an agency it knows basically what it is about, is better able to deal with these realities than most other institutions in society.

CONCLUSION

It is possible that this RPA/NFMA creature may be a good thing. I may look back on this paper in 5-10 years--or maybe 20--and be forced to admit that the printout and procedure did not devour land management after all. For that possibility to continue to exist, however, it is absolutely mandatory that all the National Forest user groups start accepting reasonable approximations of half loafs. RPA/NFMA does not provide a way for anyone to get anything even approaching all they want. If people look at this process as a pile of monkey wrenches they can toss in whenever their demands are not met, the agency is in serious trouble.

Given the finite resource base and escalating user pressures, no group's demands will be fully met. If we recognize that and try to make the system work, we could come out on a fairly even keel. With everyone's forbearance and best efforts, we may be able to achieve great progress in environmentally sound land management. My gloom stems, I suppose, from the assumption that the groups that have been willing to tremendously weaken the Forest Service in order to achieve their agendas will continue to do so. If so, silver linings are mere wishful thinking and only mask the potential for an escalating debacle on the National Forests.

Appendix A

GLOSSARY OF FOREST PLANNING AND MANAGEMENT TERMS*

Allowable sale quantity - The quantity of timber that may be sold from the area of land covered by the forest plan for a time period specified by the plan. This quantity is usually expressed on an annual basis as the average annual allowable sale quantity.

Analysis area - One or more capability areas combined for the purpose of analysis in formulating alternatives and estimating various impacts and effects.

Base timber harvest schedule - The Timber Harvest Schedule in which the planned sale and harvest for any future decade to or greater than the planned sale and harvest for the preceding decade of the planning period and this planned sale and harvest for any decade is not greater than long-term sustained yield capacity.

Biological growth potential - The average net growth attainable in a fully stocked natural area of forest land.

Capability - The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology, as well as the application of management practices, such as silviculture or protection from fire, insects and disease.

Capability area - Those areas of land delineated for the purpose of estimating responses to various management practices, resource values, output coefficients, and multi-resource or joint production functions. Capability areas may be synonymous with ecological land units, ecosystems or land response units. These capability areas are the single geographic delineations used to describe characteristics of the land and resources in integrated forest planning.

Cost efficient - A comparative measure of economic efficiency, determined by maximizing the net present worth of an alternative, subject to meeting the objectives of the alternative.

* Definitions are taken from USDA Forest Service Manual, Interim Directive Directive No. 6, Land and Resource Management Planning.

Decision criteria - Essentially the rules or standards used to evaluate alternatives. They are measurements or indicators that are designed to assist a decisionmaker to identify a preferred choice from an array of possible alternatives.

Diversity - The distribution and abundance of different plant and animal communities and specifies within the area covered by a land and resource management plan.

Ecosystem - An association of interactive organisms and their environment perceived as a single entity.

Even-aged silviculture - The combination of actions that results in the creation of stands in which which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and therefore tree sizes) throughout the forest area. Regeneration in a particular stand is obtained during a short period at or near the time that the stand has reached the desired age or size and is harvested. Clear-cutting, shelterwood cutting, seed tree cutting, and their many variations are the cutting methods used to harvest the existing stand and regenerate a new one. In even-aged stands, thinnings, weedings, cleanings, and other cultural treatments between regeneration cuts are often beneficial. Cutting is normally regulated by scheduling the area of harvest cutting to provide for a forest that contains stands having a planned distribution of age classes.

Goal - A concise statement of the state or condition that a land and resource management plan is designed to achieve. A goal is usually not quantifiable and may not have a specific date for completion.

Guideline - An indication or outline of policy or conduct.

Long-term sustained yeild capacity - The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified intensity of management consistent with multiple-use objectives.

Management area - A selected grouping of capability areas or analysis areas selected through evaluation procedures and used to locate decisions and resolve issues and concerns. An area with similar management objectives and a common management prescription.

Management direction - A statement of multiple-use and other goals and objectives, the management prescriptions, and the associated standards and guidelines for attaining them.

Multiple use - The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.
(16 U.S.C. 531(a)).

Natural forest - The condition of a forest environment at any point in time, including its associated plant and animal communities, which has been reached essentially through the process of natural succession.

Objective - A specific statement of measurable results to be achieved within a stated time period. Objectives reflect alternative mixes of all outputs or achievements which can be attained at a given budget level. Objectives may be expressed as a range of outputs.

Planning area - The area covered by a regional or Forest Plan.

Public issue - A subject or question of widespread public interest relating to management of National Forest System lands identified through public participation.

Riparian area - Geographically delineated areas, with distinctive resource values and characteristics that are comprised of aquatic and riparian ecosystems, floodplains and wetlands.

Silvicultural system - A combination of interrelated actions whereby forests are tended, harvested, and replaced. The combination of management practices used to manipulate the vegetation results in forests of distinctive form and character, and this determines the combination of multiple resource benefits that can be obtained. Systems are classified even-aged and uneven-aged.

Standard - A principle requiring a specific level of attainment, a rule to measure against.

Suitability - The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

Sustained-yield of the several products and services - The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forest without impairment of the productivity of the land. (16 U.S.C. 531(b))

Timber harvest schedule - The quantity of timber planned for sale and harvest, by time period, from the area of land covered by the forest plan. The first period, usually a decade, of the selected harvest schedule provides the allowable sale quantity. Future periods are shown to establish that sustained yield will be achieved and maintained.

Uneven-aged silviculture - The combination of actions that result in the creation of forests in which trees of several or many ages may grow together. Managed uneven-aged forests may take several forms depending upon the particular cutting methods used. In some cases, the forest is essentially similar throughout, with individual trees of many ages and sizes growing in close association. In other cases, small groups of trees of similar age may be intermingled with similar groups of different ages; although the groups are even-aged, they are not recorded separately. Finally, an uneven-aged forest may contain two or three distinct age classes on the same area, creating a storied forest. Under uneven-aged silviculture, regeneration is obtained several or many times during the period required to grow an individual tree to maturity. Single-tree selection cutting, and other forms of partial cutting are used to harvest trees, obtain regeneration, and provide appropriate intermediate culture. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes.

Forest and Rangeland Renewable Resources Planning Act

- **Act of August 17, 1974 (88 Stat. 476, as amended; 16 U.S.C. 1600–1614)**

Sec. 1. This Act may be cited as the “Forest and Rangeland Renewable Resources Planning Act of 1974”. (16 U.S.C. 1601 note)

Sec. 2. Findings.—The Congress finds that—

(1) the management of the Nation’s renewable resources is highly complex and the uses, demand for, and supply of the various resources are subject to change over time;

(2) the public interest is served by the Forest Service, Department of Agriculture, in cooperation with other agencies, assessing the Nation’s renewable resources, and developing and preparing a national renewable resource program, which is periodically reviewed and updated;

(3) to serve the national interest, the renewable resource program must be based on a comprehensive assessment of present and anticipated uses, demand for, and supply of renewable resources from the Nation’s public and private forests and rangelands, through analysis of environmental and economic impacts, coordination of multiple use and sustained yield opportunities as provided in the Multiple-Use Sustained-Yield Act of 1960 (74 Stat. 215; 16 U.S.C. 528–531), and public participation in the development of the program;

(4) the new knowledge derived from coordinated public and private research programs will promote a sound techni-

cal and ecological base for effective management, use, and protection of the Nation's renewable resources;

(5) inasmuch as the majority of the Nation's forests and rangeland is under private, State, and local governmental management and the Nation's major capacity to produce goods and services is based on these nonfederally managed renewable resources, the Federal Government should be a catalyst to encourage and assist these owners in the efficient long-term use and improvement of these lands and their renewable resources consistent with the principles of sustained yield and multiple use;

(6) the Forest Service, by virtue of its statutory authority for management of the National Forest System, research and cooperative programs, and its role as an agency in the Department of Agriculture, has both a responsibility and an opportunity to be a leader in assuring that the Nation maintains a natural resource conservation posture that will meet the requirements of our people in perpetuity; and

(7) recycled timber product materials are as much a part of our renewable forest resources as are the trees from which they originally came, and in order to extend our timber and timber fiber resources and reduce pressures for timber production from Federal lands, the Forest Service should expand its research in the use of recycled and waste timber product materials, develop techniques for the substitution of these secondary materials for primary materials, and promote and encourage the use of recycled timber product materials. (16 U.S.C. 1600)

Sec. 3. Renewable Resource Assessment.—(a) In recognition of the vital importance of America's renewable resources of the forest, range, and other associated lands to the Nation's social and economic well-being, and of the necessity for a long term perspective in planning and undertaking related national renewable resource programs administered by the Forest Service, the Secretary of Agriculture shall prepare a Renewable Resource Assessment (hereinafter called the "Assessment"). The Assessment shall be prepared not later than December 31, 1975, and shall be updated during 1979 and each tenth year thereafter, and shall include but not be limited to—

(1) an analysis of present and anticipated uses, demand for, and supply of the renewable resources, with consideration of the international resource situation, and an emphasis of pertinent supply and demand and price relationship trends;

(2) an inventory, based on information developed by the Forest Service and other Federal agencies, of present and potential renewable resources, and an evaluation of opportunities for improving their yield of tangible and intangible goods and services, together with estimates of investment costs and direct and indirect returns to the Federal Government;

(3) a description of Forest Service programs and responsibilities in research, cooperative programs and management

of the National Forest System, their interrelationships, and the relationship of these programs and responsibilities to public and private activities; and

(4) a discussion of important policy considerations, laws, regulations, and other factors expected to influence and affect significantly the use, ownership, and management of forest, range, and other associated lands.

(b) To assure the availability of adequate data and scientific information needed for development of the Assessment, section 9 of the McSweeney-McNary Act of May 22, 1928 (45 Stat. 702, as amended, 16 U.S.C. 581h), is hereby amended to read as follows:

"The Secretary of Agriculture is hereby authorized and directed to make and keep current a comprehensive survey and analysis of the present and prospective conditions of and requirements for the renewable resources of the forest and range lands of the United States, its territories and possessions, and of the supplies of such renewable resources, including a determination of the present and potential productivity of the land, and of such other facts as may be necessary and useful in the determination of ways and means needed to balance the demand for and supply of these renewable resources, benefits and uses in meeting the needs of the people of the United States. The Secretary shall carry out the survey and analysis under such plans as he may determine to be fair and equitable, and cooperate with appropriate officials of each State, territory, or possession of the United States, and either through them or directly with private or other agencies. There is authorized to be appropriated not to exceed \$20,000,000 in any fiscal year to carry out the purposes of this section."

(c) The Secretary shall report in the 1979 and subsequent Assessments on:

(1) the additional fiber potential in the National Forest System including, but not restricted to, forest mortality, growth, salvage potential, potential increased forest products sales, economic constraints, alternate markets, contract considerations, and other multiple use considerations;

(2) the potential for increased utilization of forest and wood product wastes in the National Forest System and on other lands, and of urban wood wastes and wood product recycling, including recommendations to the Congress for actions which would lead to increased utilization of material now being wasted both in the forests and in manufactured products; and

(3) the milling and other wood fiber product fabrication facilities and their location in the United States, noting the public and private forested areas that supply such facilities, assessing the degree of utilization into product form of harvested trees by such facilities, and setting forth the technology appropriate to the facilities to improve utilization either individually or in aggregate units of harvested trees and to reduce wasted wood fibers. The Secretary shall set forth a program to encourage the adoption by these facilities of these technologies for improving wood fiber utilization.

(d) In developing the reports required under subsection (c) of this section, the Secretary shall provide opportunity for public involvement and shall consult with other interested governmental departments and agencies.

NOTE.—The National Forest Management Act of October 22, 1976, mistakenly added another subsection (d). This mistake is preserved in this text.

(d)(1) It is the policy of the Congress that all forested lands in the National Forest System shall be maintained in appropriate forest cover with species of trees, degree of stocking, rate of growth, and conditions of stand designed to secure the maximum benefits of multiple use sustained yield management in accordance with land management plans. Accordingly, the Secretary is directed to identify and report to the Congress annually at the time of submission of the President's budget together with the annual report provided for under section 8(c) of this Act, beginning with submission of the President's budget for fiscal year 1978, the amount and location by forests and States and by productivity class, where practicable, of all lands in the National Forest System where objectives of land management plans indicate the need to reforest areas that have been cut-over or otherwise denuded or deforested, and all lands with stands of trees that are not growing at their best potential rate of growth. All national forest lands treated from year to year shall be examined after the first and third growing seasons and certified by the Secretary in the report provided for under this subsection as to stocking rate, growth rate in relation to potential and other pertinent measures. Any lands not certified as satisfactory shall be returned to the backlog and scheduled for prompt treatment. The level and types of treatment shall be those which secure the most effective mix of multiple use benefits.

(2) Notwithstanding the provisions of section 9 of this Act, the Secretary shall annually for eight years following the enactment of this subsection, transmit to the Congress in the manner provided in this subsection an estimate of the sums necessary to be appropriated, in addition to the funds available from other sources, to replant and otherwise treat an acreage equal to the acreage to be cut over that year, plus a sufficient portion of the backlog of lands found to be in need of treatment to eliminate the backlog within the eight-year period. After such eight-year period, the Secretary shall transmit annually to the Congress an estimate of the sums necessary to replant and otherwise treat all lands being cut over and maintain planned timber production on all other forested lands in the National Forest System so as to prevent the development of a backlog of needed work larger than the needed work at the beginning of the fiscal year. The Secretary's estimate of sums necessary, in addition to the sums available under other authorities, for accomplishment of the reforestation and other treatment of National Forest System lands under this section shall be provided annually

for inclusion in the President's budget and shall also be transmitted to the Speaker of the House and the President of the Senate together with the annual report provided for under section 8(c) of this Act at the time of submission of the President's budget to the Congress beginning with the budget for fiscal year 1978. The sums estimated as necessary for reforestation and other treatment shall include moneys needed to secure seed, grow seedlings, prepare sites, plant trees, thin, remove deleterious growth and underbrush, build fence to exclude livestock and adverse wildlife from regeneration areas and otherwise establish and improve growing forests to secure planned production of trees and other multiple use values.

(3) Effective for the fiscal year beginning October 1, 1977, and each fiscal year thereafter, there is hereby authorized to be appropriated for the purpose of reforesting and treating lands in the National Forest System \$200,000,000 annually to meet requirements of this subsection (d). All sums appropriated for the purposes of this subsection shall be available until expended.

(e) The Secretary shall submit an annual report to the Congress on the amounts, types, and uses of herbicides and pesticides used in the National Forest System, including the beneficial or adverse effects of such uses. (16 U.S.C. 1601)

Sec. 4. Renewable Resource Program.—In order to provide for periodic review of programs for management and administration of the National Forest System, for research, for cooperative State and private Forest Service programs, and for conduct of other Forest Service activities in relation to the findings of the Assessment, the Secretary of Agriculture, utilizing information available to the Forest Service and other agencies within the Department of Agriculture, including data prepared pursuant to section 302 of the Rural Development Act of 1972, shall prepare and transmit to the President a recommended Renewable Resource Program (hereinafter called the "Program"). The Program transmitted to the President may include alternatives, and shall provide in appropriate detail for protection, management, and development of the National Forest System, including forest development roads and trails; for cooperative Forest Service programs; and for research. The Program shall be developed in accordance with principles set forth in the Multiple-Use Sustained-Yield Act of June 12, 1960 (74 Stat. 215; 16 U.S.C. 528-531), and the National Environmental Policy Act of 1969 (83 Stat. 852; 42 U.S.C. 4321-4347). The Program shall be prepared not later than December 31, 1975, to cover the four-year period beginning October 1, 1976, and at least each of the four fiscal decades next following such period, and shall be updated no later than during the first half of the fiscal year ending September 30, 1980, and the first half of each fifth fiscal year thereafter to cover at least each of the four fiscal decades beginning next after such updating. The Program shall include, but not be limited to—

(1) an inventory of specific needs and opportunities for both public and private program investments. The inventory

shall differentiate between activities which are of a capital nature and those which are of an operational nature;

(2) specific identification of Program outputs, results anticipated, and benefits associated with investments in such a manner that the anticipated costs can be directly compared with the total related benefits and direct and indirect returns to the Federal Government;

(3) a discussion of priorities for accomplishment of inventoried Program opportunities, with specified costs, outputs, results, and benefits; and

(4) a detailed study of personnel requirements as needed to implement and monitor existing and ongoing programs; and

(5) Program recommendations which—

(A) evaluate objectives for the major Forest Service programs in order that multiple-use and sustained-yield relationships among and within the renewable resources can be determined;

(B) explain the opportunities for owners of forests and rangeland to participate in programs to improve and enhance the condition of the land and the renewable resource products therefrom;

(C) recognize the fundamental need to protect and, where appropriate, improve the quality of soil, water, and air resources;

(D) state national goals that recognize the interrelationships between and interdependence within the renewable resources; and

(E) evaluate the impact of the export and import of raw logs upon domestic timber supplies and prices. (16 U.S.C. 1602)

Sec. 5. National Forest System Resource Inventories.—As a part of the Assessment, the Secretary of Agriculture shall develop and maintain on a continuing basis a comprehensive and appropriately detailed inventory of all National Forest System lands and renewable resources. This inventory shall be kept current so as to reflect changes in conditions and identify new and emerging resources and values. (16 U.S.C. 1603)

Sec. 6. National Forest System Resource Planning.—(a) As a part of the Program provided for by section 3 of this Act, the Secretary of Agriculture shall develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System, coordinated with the land and resource management planning processes of State and local governments and other Federal agencies.

(b) In the development and maintenance of land management plans for use on units of the National Forest System, the Secretary shall use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences.

(c) The Secretary shall begin to incorporate the standards and guidelines required by this section in plans for units of the National Forest System as soon as practicable after enactment of this subsection and shall attempt to complete such incorporation

for all such units by no later than September 30, 1985. The Secretary shall report to the Congress on the progress of such incorporation in the annual report required by section 8(c) of this Act. Until such time as a unit of the National Forest System is managed under plans developed in accordance with this Act, the management of such unit may continue under existing land and resource management plans.

(d) The Secretary shall provide for public participation in the development, review, and revision of land management plans including, but not limited to, making the plans or revisions available to the public at convenient locations in the vicinity of the affected unit for a period of at least three months before final adoption, during which period the Secretary shall publicize and hold public meetings or comparable processes at locations that foster public participation in the review of such plans or revisions.

(e) In developing, maintaining, and revising plans for units of the National Forest System pursuant to this section, the Secretary shall assure that such plans—

(1) provide for multiple use and sustained yield of the products and services obtained therefrom in accordance with the Multiple-Use Sustained-Yield Act of 1960, and, in particular, include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness; and

(2) determine forest management systems, harvesting levels, and procedures in the light of all of the uses set forth in subsection (c)(1), the definition of the terms 'multiple use' and 'sustained yield' as provided in the Multiple-Use Sustained-Yield Act of 1960, and the availability of lands and their suitability for resource management.

(f) Plans developed in accordance with this section shall—

(1) form one integrated plan for each unit of the National Forest System, incorporating in one document or one set of documents, available to the public at convenient locations, all of the features required by this section;

(2) be embodied in appropriate written material, including maps and other descriptive documents, reflecting proposed and possible actions, including the planned timber sale program and the proportion of probable methods of timber harvest within the unit necessary to fulfill the plan;

(3) be prepared by an interdisciplinary team. Each team shall prepare its plan based on inventories of the applicable resources of the forest;

(4) be amended in any manner whatsoever after final adoption after public notice, and, if such amendment would result in a significant change in such plan, in accordance with the provisions of subsections (e) and (f) of this section and public involvement comparable to that required by subsection (d) of this section; and

(5) be revised (A) from time to time when the Secretary finds conditions in a unit have significantly changed, but at least every fifteen years, and (B) in accordance with the provisions of subsections (e) and (f) of this section and public

involvement comparable to that required by subsection (d) of this section.

(g) As soon as practicable, but not later than two years after enactment of this subsection, the Secretary shall in accordance with the procedures set forth in section 553 of title 5, United States Code, promulgate regulations, under the principles of the Multiple-Use Sustained-Yield Act of 1960, that set out the process for the development and revision of the land management plans, and the guidelines and standards prescribed by this subsection. The regulations shall include, but not be limited to—

(1) specifying procedures to insure that land management plans are prepared in accordance with the National Environmental Policy Act of 1969, including, but not limited to, direction on when and for what plans an environmental impact statement required under section 102(2)(C) of that Act shall be prepared;

(2) specifying guidelines which—

(A) require the identification of the suitability of lands for resource management;

(B) provide for obtaining inventory data on the various renewable resources, and soil and water, including pertinent maps, graphic material, and explanatory aids; and

(C) provide for methods to identify special conditions or situations involving hazards to the various resources and their relationship to alternative activities;

(3) specifying guidelines for land management plans developed to achieve the goals of the Program which—

(A) insure consideration of the economic and environmental aspects of various systems of renewable resource management, including the related systems of silviculture and protection of forest resources, to provide for outdoor recreation (including wilderness), range, timber, watershed, wildlife, and fish;

(B) provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives, and within the multiple-use objectives of a land management plan adopted pursuant to this section, provide, where appropriate, to the degree practicable, for steps to be taken to preserve the diversity of tree species similar to that existing in the region controlled by the plan;

(C) insure research on and (based on continuous monitoring and assessment in the field) evaluation of the effects of each management system to the end that it will not produce substantial and permanent impairment of the productivity of the land;

(D) permit increases in harvest levels based on intensified management practices, such as reforestation, thinning, and tree improvement if (i) such practices justify increasing the harvests in accordance with the Multiple-Use Sustained-Yield Act of 1960, and (ii) such harvest levels are decreased at the end of each planning period if such practices cannot be successfully implemented or

funds are not received to permit such practices to continue substantially as planned;

(E) insure that timber will be harvested from National Forest System lands only where—

(i) soil, slope, or other watershed conditions will not be irreversibly damaged;

(ii) there is assurance that such lands can be adequately restocked within five years after harvest;

(iii) protection is provided for streams, streambanks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat; and

(iv) the harvesting system to be used is not selected primarily because it will give the greatest dollar return or the greatest unit output of timber; and

(F) insure that clearcutting, seed tree cutting, shelterwood cutting, and other cuts designed to regenerate an even-aged stand of timber will be used as a cutting method on National Forest System lands only where—

(i) for clearcutting, it is determined to be the optimum method, and for other such cuts it is determined to be appropriate, to meet the objectives and requirements of the relevant land management plan;

(ii) the interdisciplinary review as determined by the Secretary has been completed and the potential environmental, biological, esthetic, engineering, and economic impacts on each advertised sale area have been assessed, as well as the consistency of the sale with the multiple use of the general area;

(iii) cut blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain;

(iv) there are established according to geographic areas, forest types, or other suitable classifications the maximum size limits for areas to be cut in one harvest operation, including provision to exceed the established limits after appropriate public notice and review by the responsible Forest Service officer one level above the Forest Service officer who normally would approve the harvest proposal: *Provided*, That such limits shall not apply to the size of areas harvested as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm; and

(v) such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources, and the regeneration of the timber resource.

(h)(1) In carrying out the purposes of subsection (g) of this section, the Secretary of Agriculture shall appoint a committee of scientists who are not officers or employees of the Forest Service. The committee shall provide scientific and technical advice

and counsel on proposed guidelines and procedures to assure that an effective interdisciplinary approach is proposed and adopted. The committee shall terminate upon promulgation of the regulations, but the Secretary may, from time to time, appoint similar committees when considering revisions of the regulations. The views of the committees shall be included in the public information supplied when the regulations are proposed for adoption.

(2) Clerical and technical assistance, as may be necessary to discharge the duties of the committee, shall be provided from the personnel of the Department of Agriculture.

(3) While attending meetings of the committee, the members shall be entitled to receive compensation at a rate of \$100 per diem, including travelttime, and while away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for persons in the Government service employed intermittently.

(i) Resource plans and permits, contracts, and other instruments for the use and occupancy of National Forest System lands shall be consistent with the land management plans. Those resource plans and permits, contracts, and other such instruments currently in existence shall be revised as soon as practicable to be made consistent with such plans. When land management plans are revised, resource plans and permits, contracts, and other instruments, when necessary, shall be revised as soon as practicable. Any revision in present or future permits, contracts, and other instruments made pursuant to this section shall be subject to valid existing rights.

(j) Land management plans and revisions shall become effective thirty days after completion of public participation and publication of notification by the Secretary as required under section 6(d) of this Act.

(k) In developing land management plans pursuant to this Act, the Secretary shall identify lands within the management area which are not suited for timber production, considering physical, economic, and other pertinent factors to the extent feasible, as determined by the Secretary, and shall assure that, except for salvage sales or sales necessitated to protect other multiple-use values, no timber harvesting shall occur on such lands for a period of 10 years. Lands once identified as unsuitable for timber production shall continue to be treated for reforestation purposes, particularly with regard to the protection of other multiple-use values. The Secretary shall review his decision to classify these lands as not suited for timber production at least every 10 years and shall return these lands to timber production whenever he determines that conditions have changed so that they have become suitable for timber production.

(l) The Secretary shall—

(1) formulate and implement, as soon as practicable, a process for estimating long-terms costs and benefits to support the program evaluation requirements of this Act. This process shall include requirements to provide information on a representative sample basis of estimated expenditures associated with the reforestation, timber stand improvement,

and sale of timber from the National Forest System, and shall provide a comparison of these expenditures to the return to the Government resulting from the sale of timber; and

(2) include a summary of data and findings resulting from these estimates as a part of the annual report required pursuant to section 8(c) of this Act, including an identification on a representative sample basis of those advertised timber sales made below the estimated expenditures for such timber as determined by the above cost process; and

(m) The Secretary shall establish—

(1) standards to insure that, prior to harvest, stands of trees throughout the National Forest System shall generally have reached the culmination of mean annual increment of growth (calculated on the basis of cubic measurement or other methods of calculation at the discretion of the Secretary): *Provided*, That these standards shall not preclude the use of sound silvicultural practices, such as thinning or other stand improvement measures: *Provided further*, That these standards shall not preclude the Secretary from salvage or sanitation harvesting of timber stands which are substantially damaged by fire, windthrow or other catastrophe, or which are in imminent danger from insect or disease attack; and

(2) exceptions to these standards for the harvest of particular species of trees in management units after consideration has been given to the multiple uses of the forest including, but not limited to, recreation, wildlife habitat, and range and after completion of public participation processes utilizing the procedures of subsection (d) of this section. (16 U.S.C. 1604)

Sec. 7. Cooperation in Resource Planning.—The Secretary of Agriculture may utilize the Assessment, resource surveys, and Program prepared pursuant to this Act to assist States and other organizations in proposing the planning for the protection, use, and management of renewable resources on non-Federal land. (16 U.S.C. 1605)

Sec. 8. National Participation.—(a) On the date Congress first convenes in 1976 and thereafter following each updating of the Assessment and the Program, the President shall transmit to the Speaker of the House of Representatives and the President of the Senate, when Congress convenes, the Assessment as set forth in section 3 of this Act and the Program as set forth in section 4 of this Act, together with a detailed Statement of Policy intended to be used in framing budget requests by that Administration for Forest Service activities for the five- or ten-year program period beginning during the term of such Congress for such further action deemed appropriate by the Congress. Following the transmission of such Assessment, Program, and Statement of Policy, the President shall, subject to other actions of the Congress, carry out programs already established by law in accordance with such Statement of Policy or any subsequent amendment or modification thereof approved by the Congress, unless, before the end of the first period of ninety calendar days

of continuous session of Congress after the date on which the President of the Senate and the Speaker of the House are recipients of the transmission of such Assessment, Program, and Statement of Policy, either House adopts a resolution reported by the appropriate committee of jurisdiction disapproving the Statement of Policy. For the purpose of this subsection, the continuity of a session shall be deemed to be broken only by an adjournment sine die, and the days on which either House is not in session because of an adjournment of more than three days to a day certain shall be excluded in the computation of the sixty-day period. Notwithstanding any other provision of this Act, Congress may revise or modify the Statement of Policy transmitted by the President, and the revised or modified Statement of Policy shall be used in framing budget requests.

(b) Commencing with the fiscal budget for the year ending September 30, 1977, requests presented by the President to the Congress governing Forest Service activities shall express in qualitative and quantitative terms the extent to which the programs and policies projected under the budget meet the policies approved by the Congress in accordance with subsection (a) of this section. In any case in which such budget so presented recommends a course which fails to meet the policies so established, the President shall specifically set forth the reason or reasons for requesting the Congress to approve the lesser programs or policies presented. Amounts appropriated to carry out the policies approved in accordance with subsection (a) of this section shall be expended in accordance with the Congressional Budget and Impoundment Control Act of 1974, Public Law 93-344.

(c) For the purpose of providing information that will aid Congress in its oversight responsibilities and improve the accountability of agency expenditures and activities, the Secretary of Agriculture shall prepare an annual report which evaluates the component elements of the Program required to be prepared by section 3 of this Act which shall be furnished to the Congress at the time of submission of the annual fiscal budget commencing with the third fiscal year after the enactment of this Act. With regard to the research component of the program, the report shall include, but not be limited to, a description of the status of major research programs, significant findings, and how these findings will be applied in National Forest System management.

(d) These annual evaluation reports shall set forth progress in implementing the Program required to be prepared by section 3 of this Act, together with accomplishments of the Program as they relate to the objectives of the Assessment. Objectives should be set forth in qualitative and quantitative terms and accomplishments should be reported accordingly. The report shall contain appropriate measurements of pertinent costs and benefits. The evaluation shall assess the balance between economic factors and environmental quality factors. Program benefits shall include, but not be limited to, environmental quality factors such as esthetics, public access, wildlife habitat, recreational and wilderness use, and economic factors such as the excess of cost savings over the value of foregone benefits and the rate of return on renewable resources.

(e) The reports shall indicate plans for implementing corrective action and recommendations for new legislation where warranted.

(f) The reports shall be structured for Congress in concise summary form with necessary detailed data in appendices. (16 U.S.C. 1606)

Sec. 9. National Forest System Program Elements.—The Secretary of Agriculture shall take such action as will assure that the development and administration of the renewable resources of the National Forest System are in full accord with the concepts for multiple use and sustained yield of products and services as set forth in the Multiple-Use Sustained-Yield Act of 1960. To further these concepts, the Congress hereby sets the year 2000 as the target year when the renewable resources of the National Forest System shall be in an operating posture whereby all backlogs of needed treatment for their restoration shall be reduced to a current basis and the major portion of planned intensive multiple-use sustained-yield management procedures shall be installed and operating on an environmentally-sound basis. The annual budget shall contain requests for funds for an orderly program to eliminate such backlogs: *Provided*, That when the Secretary finds that (1) the backlog of areas that will benefit by such treatment has been eliminated, (2) the cost of treating the remainder of such area exceeds the economic and environmental benefits to be secured from their treatment, or (3) the total supplies of the renewable resources of the United States are adequate to meet the future needs of the American people, the budget request for these elements of restoration may be adjusted accordingly. (16 U.S.C. 1607)

Sec. 10. Transportation System.—(a) The Congress declares that the installation of a proper system of transportation to service the National Forest System, as is provided for in Public Law 88-657, the Act of October 13, 1964 (16 U.S.C. 532-538), shall be carried forward in time to meet anticipated needs on an economical and environmentally sound basis, and the method chosen for

ancing the construction and maintenance of the transportation system should be such as to enhance local, regional, and national benefits, except that the financing of forest development roads as authorized by clause (2) of section 4 of the Act of October 13, 1964, shall be deemed "budget authority" and "budget outlays" as those terms as defined in section 3(a) of the Congressional Budget and Impoundment Control Act of 1974 and shall be effective for any fiscal year only in the manner required for new spending authority as specified by section 401(a) of that Act.

(b) Unless the necessity for a permanent road is set forth in the forest development road system plan, any road constructed on land of the National Forest System in connection with a timber contract or other permit or lease shall be designed with the goal of reestablishing vegetative cover on the roadway and areas where the vegetative cover has been disturbed by the construction of the road, within ten years after the termination of the contract, permit, or lease either through artificial or natural

means. Such action shall be taken unless it is later determined that the road is needed for use as a part of the National Forest Transportation System.

(c) Roads constructed on National Forest System lands shall be designed to standards appropriate for the intended uses, considering safety, cost of transportation, and impacts on land and resources. (16 U.S.C. 1608)

Sec. 11. (a) **National Forest System Defined.**—Congress declares that the National Forest System consists of units of federally owned forest, range, and related lands throughout the United States and its territories, united into a nationally significant system dedicated to the long-term benefit for present and future generations, and that it is the purpose of this section to include all such areas into one integral system. The "National Forest System" shall include all national forest lands reserved or withdrawn from the public domain of the United States, all national forest lands acquired through purchase, exchange, donation, or other means, the national grasslands and land utilization projects administered under title III of the Bankhead-Jones Farm Tenant Act (50 Stat. 525, 7 U.S.C. 1010-1012), and other lands, waters, or interests therein which are administered by the Forest Service or are designated for administration through the Forest Service as a part of the system. Notwithstanding the provisions of the Act of June 4, 1897 (30 Stat. 34; 16 U.S.C. 473), no land now or hereafter reserved or withdrawn from the public domain as national forests pursuant to the Act of March 3, 1891 (26 Stat. 1103; 16 U.S.C. 471), or any act supplementary to and amendatory thereof, shall be returned to the public domain except by an act of Congress.

(b) The on-the-ground field offices, field supervisory offices, and regional offices of the Forest Service shall be so situated as to provide the optimum level of convenient, useful services to the public, giving priority to the maintenance and location of facilities in rural areas and towns near the national forest and Forest Service program locations in accordance with the standards in section 901(b) of the Act of November 30, 1970 (84 Stat. 1383), as amended. (16 U.S.C. 1609)

Sec. 12. Renewable Resources.—In carrying out this Act, the Secretary of Agriculture shall utilize information and data available from other Federal, State, and private organizations and shall avoid duplication and overlap of resource assessment and program planning efforts of other Federal agencies. The term "renewable resources" shall be construed to involve those matters within the scope of responsibilities and authorities of the Forest Service on the date of this Act and on the date of enactment of any legislation amendatory or supplementary thereto. (16 U.S.C. 1610)

Sec. 13. Limitations on Timber Removal.—(a) The Secretary of Agriculture shall limit the sale of timber from each national forest to a quantity equal to or less than a quantity which can be removed from such forest annually in perpetuity on a

sustained-yield basis: *Provided*, That, in order to meet overall multiple-use objectives, the Secretary may establish an allowable sale quantity for any decade which departs from the projected long-term average sale quantity that would otherwise be established: *Provided further*, That any such planned departure must be consistent with the multiple-use management objectives of the land management plan. Plans for variations in the allowable sale quantity must be made with public participation as required by section 6(d) of this Act. In addition, within any decade, the Secretary may sell a quantity in excess of the annual allowable sale quantity established pursuant to this section in the case of any national forest so long as the average sale quantities of timber from such national forest over the decade covered by the plan do not exceed such quantity limitation. In those cases where a forest has less than two hundred thousand acres of commercial forest land, the Secretary may use two or more forests for purposes of determining the sustained yield.

(b) Nothing in subsection (a) of this section shall prohibit the Secretary from salvage or sanitation harvesting of timber stands which are substantially damaged by fire, windthrow, or other catastrophe, or which are in imminent danger from insect or disease attack. The Secretary may either substitute such timber for timber that would otherwise be sold under the plan or, if not feasible, sell such timber over and above the plan volume. (16 U.S.C. 1611)

Sec. 14. Public Participation and Advisory Boards.—(a) In exercising his authorities under this Act and other laws applicable to the Forest Service, the Secretary, by regulation, shall establish procedures, including public hearings where appropriate, to give the Federal, State, and local governments and the public adequate notice and an opportunity to comment upon the formulation of standards, criteria, and guidelines applicable to Forest Service programs.

(b) In providing for public participation in the planning for and management of the National Forest System, the Secretary, pursuant to the Federal Advisory Committee Act (86 Stat. 770) and other applicable law, shall establish and consult such advisory boards as he deems necessary to secure full information and advice on the execution of his responsibilities. The membership of such boards shall be representative of a cross section of groups interested in the planning for and management of the National Forest System and the various types of use and enjoyment of the lands thereof. (16 U.S.C. 1612)

Sec. 15. Regulations.—The Secretary of Agriculture shall prescribe such regulations as he determines necessary and desirable to carry out the provisions of this Act. (16 U.S.C. 1613)

Sec. 16. Severability.—If any provision of this Act or the application thereof to any person or circumstances is held invalid, the validity of the remainder of the Act and of the application of such provision to other persons and circumstances shall not be affected thereby. (16 U.S.C. 1614)

Department of Agriculture

Forest Service

National Forest System Land and Resources Management Planning

Outline of Rules for Land Management Planning in the National Forest System

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 - 7. Location and availability of documents.
 - d. Means to Effective Public Participation.
 - e. Public Input Analysis.
 - f. Public Participation in Monitoring and

- Evaluation.
- g. Summaries of Public Participation Activities.
 - h. Public Notice of Public Participation Activities:
 - i. Notifying Interested or Affected Parties.
 - j. Duties of Responsible Forest Service Official:
 - k. Copies of Plans to be Available:
 - 1. Assessment and Program.
 - 2. Regional plan.
 - 3. Forest plan.
 - 4. Convenient locations for public review.
 - l. Supporting Documents to be Available.
 - m. Three Month Review Period.
 - n. Fees for Reproducing Materials.
 - 219.6 Coordination of Public Planning Efforts.
 - a. Introduction & Principles
 - b. Coordination of Forest Service Planning:
 - 1. Recognition of other agencies' objectives.
 - 2. Assessment of interrelated impacts.
 - 3. Determination of how to deal with these impacts.
 - 4. Conflicts and alternatives for resolution.
 - c. Notice of Proposed Action and Schedule.
 - d. Agreements on Procedural Measures with Governors:
 - e. Meetings and Conferences.
 - f. Review of Land Use Policies of Other Agencies.
 - g. Coordination with Adjacent Property Owners:
 - h. Resolving Management Concerns and Identifying Research Needs.
 - i. Monitoring Effects on Adjacent Lands.
 - 219.9 Regional Planning Procedure.
 - a. Regional Plan.
 - b. Responsibilities:
 - 1. DEIS
 - 2. FEIS
 - c. Plan Review by Chief:
 - 1. Approve proposal and the environmental impact statement; Issue Report of Decision:
 - i. State the decision.
 - ii. Identify alternatives considered.
 - iii. Specify preferred alternative.
 - iv. Identify and discuss all factors considered.
 - v. Means to Avoid Environmental Harm.
 - 2. Disapprove proposal or the EIS.
 - 3. Exclusion from appeal under 36 CFR 211.19: provisions for requests for reconsideration; requests for stays of implementation.
 - d. Conformity.
 - e. Amendment.
 - f. Revision.
 - g. Planning Records.
 - h. Regional Plan Content:
 - 1. Major public issues and management concerns.
 - 2. Management situation summary.
 - 3. Management direction—programs, goals and objectives.
 - 4. Distribution of regional activities.
 - 5. Management standards and guidelines.
 - 6. Monitoring and evaluation.
 - 7. Appropriate references.
 - 8. Interdisciplinary team members and qualifications.
 - i. Monitoring and Evaluation:
 - 1. Management practices to be measured and frequency.
 - 2. State and Private Forestry programs.
 - 3. Economic and social impacts.
 - 4. Resource outputs and environmental

- impacts on areas larger than national forests or states.
- 5. Research programs.
 - 6. NFS programs.
- 219.10 Regional Planning Actions.
- a. Introduction.
 - b. Concerns and Issues to be Considered:
 - 1. Efficiency.
 - 2. Timber and Wood fiber.
 - 3. Range resources.
 - 4. Fire management.
 - 5. Disease and pests.
 - 6. Water quality, quantity and soil productivity.
 - 7. Landownership.
 - 8. Recreation.
 - 9. Fish and wildlife habitats.
 - 10. Threatened and endangered species.
 - 11. Mineral exploration and development.
 - 12. Transportation facilities.
 - 13. Visual quality.
 - 14. Rights of way.
 - 15. Cultural resources.
 - 16. Research natural areas.
 - Wilderness Management Options.
 - c. Regional Plans Contribute and Respond to the Assessment and Program.
 - d. Each Regional Plan will Establish Standards and Guidelines for:
 - 1. Tree openings created by even-aged management.
 - 2. Biological growth potential used in determining timber capability.
 - 3. Transportation corridors.
 - 4. Air quality.
 - 5. Unit of measure for expressing mean annual increment.
 - e. Public Participation and Coordination Activities.
 - f. Data for Regional Planning.
 - g. Regional Analysis of the Management Situation.
 - 219.11 Forest Planning Procedure.
 - a. Forest Plan.
 - b. Responsibilities:
 - 1. Forest Supervisor.
 - 2. Interdisciplinary Team.
 - i. DEIS.
 - ii. FEIS.
 - c. Approval Process, Plan Review by Regional Forester.
 - 1. Approve proposal and environmental impact statement: Issue Record of Decision.
 - i. State the decision.
 - ii. Identify alternative considered.
 - iii. Specify preferred alternative.
 - iv. Identify and discuss all factors considered.
 - v. Means to Avoid Environmental Harm
 - 2. Disapprove the proposal or the EIS.
 - 3. Transmit base timber harvest schedule departure request to Chief.
 - 4. Appeal of Decision to approve or disapprove forest plan; requests for stay of implementation.
 - d. Conformity.
 - e. Amendment.
 - f. Revision.
 - g. Planning Records.
 - h. Forest Plan Content:
 - 1. Major public issues and management concerns.
 - 2. Management situation summary.
 - 3. Long-range policies, goals and objectives, with management prescription.
 - 4. Vicinity, timing, standards and guidelines for practices.

| | | |
|---|---|--|
| Treatments: | (5) Effects on Minority Groups and Civil Rights. | (ii) Identify Areas Requiring More Intensive Inventory. |
| 1. No timber harvesting on lands classified as not suited for timber production. | (6) Effects on Prime Farmlands, Wetlands and Flood Plains. | (iii) Evaluation of Sites for the National Register of Historic Places |
| 2. Allowable sale quantity. | (7) Relationship to Production Goals. | (iv) Provide Protective Measures |
| 3. Five year restocking requirement. | (8) Energy Requirements. | (v) Maintenance of Historic Sites |
| 4. Cultural treatments included in the forest plan. | (9) Direct and Indirect Benefits and Costs. | (vi) Identify Opportunities for Interpretation |
| 5. Decreasing harvest levels. | (i) Expected Real-Dollar Costs. | (2) Formulation and Analysis of Alternatives |
| 6. Requirements for even-aged management. | (ii) Estimated Real-Dollar Value of All Outputs. | (3) Evaluation of Alternatives |
| 7. No harvest where such treatment would favor an abnormal increase in injurious insects and disease organisms. | (iii) Evaluate Local Economic Effect. | Definitions |
| i. Monitoring: | 219.5(h) Evaluation of Alternatives. | 219.3 Terms Used in Regulations |
| 1. Lands adequately restocked. | 219.5(i) Alternative Selection. | Diversity |
| 2. Reexamine lands not suited for timber production every 10 years. | 219.12(b)(3) Forest Management Alternative. | 219.3(g) Definition |
| 3. Maximum size limit evaluation. | Amendment | 219.13(g) Diversity of Plant and Animal Communities and Tree Species |
| 4. Pests and disease don't increase following management activities. | 219.9(e), 219.11(e) Amendment | Documents |
| 219.14 Research. | Animals See <i>Diversity and Fish and Wildlife</i> | 219.7(k) Copies of Plans To Be Available |
| a. Identification of Research Needs Through Planning. | Annual Reports | (1) Assessment and Program |
| b. Establish Research to Support Management. | 219.14(c) Annual Reports | (2) Regional Plan |
| c. Annual Reports of Major Research. | Applicability See <i>Scope</i> | (3) Forest Plan |
| 219.15 Revision of Regulations. | 219.9(b)(3) Of Decisions Concerning Regional Plans | (4) Convenient Locations for Public Review |
| 219.16 Transition Period. | 219.11(c)(4) Of Decisions Concerning Forest Plans | 219.7(l) Supporting Documents To Be Available |
| a. Lands continued to be managed under existing land use and resource plans. | Approval See <i>Process</i> | 219.7(n) Fees for Reproducing Materials |
| b. Forest Plan Implementation. | Assessment | 219.9(b) Environmental Impact Statements |
| Index to Regulations—Part 219 Planning, Subpart A | 219.3(b) Definition | 219.11b |
| Adjacent Lands | Base Harvest | Economics |
| 219.8(g) Coordination With Adjacent Property Owners. | 219.3(c) Definition | 219.3(h) Economic Efficiency Analysis Definition |
| 219.8(i) Monitoring Effects on Adjacent Lands. | 219.4(b)(1) National | 219.5 (c), (e), (f) Practices, Economic Analysis of (g)(k) |
| Allowable Sale Quantity | Biological | 219.9(i) |
| 219.3(a) Definition. | 219.3(d) Biological Growth Potential Definition | 219.10(b) |
| Alternatives | Browsing Lands See <i>Grazing</i> | 219.12(b) |
| 219.5(f) Formulation of Alternatives. | Capability | Environmental |
| (1) Range of Outputs and Expenditure Levels. | 219.2(e) Definition | 219.3(i) Environmental Analysis Definition |
| (ii) Each Alternative will be Capable of Being Achieved. | Concerns See <i>Issues</i> | 219.3(j) Environmental Documents Definition |
| (iii) No Action Alternative To Be Included. | Conformance | 219.9(b) Environmental Impact Statement |
| (iv) All Alternatives To Provide For Elimination of Backlogs for Restoration. | 219.1(a) Conformance with NEPA and RPA | 219.119(c) |
| (iv) Issues and Concerns To Be Addressed In An Alternative. | Conformity | Environmental Design Arts |
| (v) Cost Effectiveness. | 219.9(d) Conformity | 219.1(b)(13) |
| (2) Alternative Content. | 219.11(d) | 219.3(i) |
| (i) Long-Term Results and Conditions. | Coordination See <i>Forest, Regional, Meetings, Planning, Public</i> | 219.5(g)(1) |
| (ii) Goods and Services To Be Produced. | 219.8 | 219.5(h) |
| (iii) Resource Management Standards and Guidelines. | Corridor | 219.8(a) |
| (iv) Purposes of Management Direction Proposed. | 219.3(f) Definition | 219.12(i)(1)(ii) |
| 219.5(g) Estimated Effects of Alternatives. | 219.10(b)(4) Require Corridors to extent practicable | 219.12(i)(4) |
| (1) Expected Outputs for Planning Periods. | 219.10(d)(5) Recommended corridors | 219.13(b)(6) |
| (2) Relationship Between Short-Term Uses and Long-Term Productivity. | Cultural Resources | 219.13(c)(6) |
| (3) Adverse Environmental Effects. | 219.12(1) Consideration in Forest Planning | 219.13(d)(2)(i) |
| (4) Irreversible Resource Commitments. | (1) Forest Plan Will: | 219.13(g) |
| | (i) Provide an Overview | Even-Aged Silviculture |
| | | 219.3(k) Even-Aged Silviculture, Definition |
| | | 219.13(d) Openings Created by Even-Aged Management |
| | | (1) Must Be Shaped and Blended |
| | | (2) Maximum Size Limits: |
| | | (i) Factors To Be Considered in Determining Size Limits |
| | | (ii) Size Limits May Be Exceeded |
| | | (iii) Natural Catastrophic Conditions Excluded |

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|---|---|---|
| <i>Evaluation See Monitoring</i> | <i>Guideline See Management Standards</i> | (3) Potential to Resolve Issues and Concerns
(4) Technical and Economic Feasibility
(5) Management Direction
219.8(h) Resolving Management Concerns and Identifying Research Needs
219.13(c) Management Prescriptions Involving Vegetation Manipulation of Tree Cover Will: |
| <i>Final Evaluation Impact Statement (FEIS)</i>
See Responsibilities. | 219.3(n) Definition | (1) Be Best Suited for Multiple Use
(2) Assure Adequate Restocking Within 5 Years
(3) Not Be Chosen Primarily Because of Greatest Dollar Return
(3) Not Be Chosen Primarily Because of Greatest Dollar Return
(4) Consider Potential Effects of Residual Trees
(5) Avoid Permanent Impairment of Site Productivity
(6) Provide Desired Effects
(7) Be Practical in Terms of Transportation and Harvesting Requirements
(b) Management Practices Will:
(1) Conserve Soil and Water Resources
(2) Minimize Physical Hazards
(3) Prevent Pest Hazards
(4) Protect Water Bodies
(5) Maintain Plant and Animal Diversity
(6) Monitored and Evaluated
(7) Environmental Assessments
(8) Maintain Fish and Wildlife Populations
(9) Prevent Adverse Modification of Critical Habitat for Threatened and Endangered Species
(10) Provide Right of Way and Transportation Corridors
(11) Ensure Appropriate Road Construction Design According to Use
(12) Provide That All Roads Are Designed to Re-Establish Vegetative Cover
(13) Maintain Air Quality |
| <i>Fish and Wildlife</i> | <i>Implementation See Plan</i> | <i>Management Standards and Guidelines</i> |
| 219.12(g) Fish and Wildlife Habitat Requirements | <i>Information Levels See Documents</i> | 219.13 |
| (1) Desired Future Conditions
(2) Management Indicator Species
(3) Consulting Other Agencies' Fish and Wildlife Biologists
(4) Access and Dispersal Problems
(5) Pest and Fire Management Effects
(6) Population Trends of Management Indicator Species
(7) Critical Habitat for Threatened and Endangered Species | <i>Input See Public</i> | <i>Meeting. Coordination</i> |
| <i>Forest Planning and Plans</i> | <i>Integrated See Pest Management</i> | 219.8(e) Coordination of Meetings |
| 219.5 Forest Planning Process | <i>Interdisciplinary</i> | <i>Minerals</i> |
| 219.11 Forest Planning Procedure | 219.6 Interdisciplinary Approach | 219.12(j) Mineral Exploration and Development Consideration and Information Needs |
| 219.11(a) Plan | 219.6(b) Interdisciplinary Team Composition | (1) Active Mines
(2) Mineral Rights
(3) Probable Occurrences
(4) Development Potential
(5) Probable Effect of Renewable Resource Allocation on Mineral Activities |
| 219.11(h) Forest Plan Content | (c) Interdisciplinary Team Member Qualifications | <i>Monitoring and Evaluation</i> |
| (1) Major Public Issues and Management Concerns
(2) Management Situation Summary
(3) Policies, Goals, and Multiple-Use Management Objectives, with Management Prescription
(4) Vicinity, Timing, Standards and Guidelines for Practices
(5) Monitoring and Evaluation Requirements
(6) Appropriate References to Information
(7) Interdisciplinary Team Members and Qualifications | (1) Solve Complex Problems
(2) Communication Skills
(4) Conceptualize Planning Problems and Situations
(3) Planning Concepts, Processes and Techniques
(d) Interdisciplinary Team Leadership | 219.5(k)
(1) Monitoring Activities
(i) Actions, Effects or Resources To Be Measured and Frequency
(ii) Expected Precision and Reliability
(iii) Time When Evaluation is to be Reported
(2) Evaluation Reports |
| 219.12 Forest Planning Actions | <i>Inventory</i> | |
| <i>Forest Service Planning See Planning. Forest Service Planning</i> | 219.5(d) Inventory Data and Collection. | |
| <i>Grazing</i> | 219.13(g) | |
| .219.3(l) Definition | <i>Issues</i> | |
| <i>Goods and Services</i> | 219.5(b) Identification of Issues, Concerns and Opportunities. | |
| 219.3(m) Definition | 219.10(b) Concerns and Issues To Be Considered | |
| <i>Governors See Procedure and Coordination</i> | (1) Efficiency | |
| <i>Grazing Lands</i> | (2) Timber and Wood Fiber | |
| 219.12(h) Grazing and Browsing Lands | (3) Range Resources | |
| (1) Procedures Used and Data Obtained
(i) Range Condition and Trend Studies
(ii) Records of Actual Use
(iii) Management Indicator Species of Wildlife
(iv) Present and Potential Study Estimates
(2) Analysis of the Management Situation
(3) Alternative Range Management Practices
(i) Grazing Management Systems
(ii) Methods
(iii) Evaluation of Pest Problems
(iv) Conflicts and Beneficial Interactions
(v) Physical Facilities
(vi) Existing Permits
(vii) Free Roaming Horses and Burros | (4) Fire Management
(5) Disease and Pests
(6) Water Quality, Quantity and Soil Productivity
(7) Landownership
(8) Recreation
(9) Fish and Wildlife Habitats
(10) Threatened and Endangered Species
(11) Mineral Exploration and Development
(12) Transportation Facilities
(13) Visual Quality
(14) Rights of Way
(15) Cultural Resources
(16) Research Natural Areas | |
| <i>Growth See Biological</i> | <i>Land Use</i> | |
| | 219.8(f) Appraisal of Land Use Policies of Other Agencies | |
| | 219.16(a) Lands Continued To Be Managed Under Existing Land Use and Resource Plans | |
| | <i>Management</i> | |
| | 219.3(q) Concern, Definition of. | |
| | 219.3(r) Direction | |
| | (s) Intensity | |
| | (t) Practice | |
| | (u) Prescription | |
| | 219.5(e) Analysis of the Situation | |
| | (1) Range of Goods and Services | |
| | (2) Projections of Demand | |

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| (3) Changes in Management Direction
219.9(i) | Objective |
| (1) Management Practices to be Measured and Frequency | 219.3(w) Definition |
| (2) State and Private Forestry Programs | Pest Management |
| (3) Economic and Social Impacts | 219.3(o) Integrated Pest Management, Definition |
| (4) Resource Outputs and Environmental Impacts on Areas Larger Than National Forests or States | Planning |
| (5) Research Programs | 219.3(x) Planning Area Definition |
| (6) NFS Programs | 219.4 Planning Levels |
| 219.11(i) | (b) Planning Levels and Relationships |
| (1) Monitoring Requirements in the Forest Plan | (1) National |
| (i) Management Practices to be Measured and Frequency | (2) Regional |
| (ii) Expected Precision and Reliability | (3) Forest |
| (iii) Evaluation Reports | 219.5(a) General Planning Approach |
| (2) Evaluation Reports Will Contain at Least | (c) Planning Criteria |
| (i) Quantitative Estimates of Performance | (1) Laws |
| (ii) Document of Measured Effects | (2) Goals |
| (iii) Recommendations for Change | (3) Recommendations and Assumptions |
| (iv) Continuing Evaluation | (4) Other Agencies |
| (v) Costs | (5) Ecological, Technical and Economic Factors |
| (3) Interdisciplinary Team Recommendations | (6) Economic Analysis Guidelines |
| 219.13(i) | (7) Standards and Guidelines |
| (1) Lands Adequately Restocked | (j) Plan Implementation |
| (2) Re-Examine Lands Not Suited for Timber Production Every 10 years | (1) Annual Program Proposals |
| (3) Maximum Size Limit Evaluation | (2) Budget Allocations |
| (4) Insects and Disease Monitored Following Management Activities | (3) In Compliance With 219.9(d) and 219.11(d) |
| Multiple Use | 219.9(g) Planning Records |
| 219.3(v) Definition | 219.11(g) Planning Records |
| Natural Areas See Research Natural Areas | Plan Review See Review |
| NEPA See Conformance | Planning, Forest Service |
| No Action Alternative | 219.8(b) Coordination of Forest Service Planning |
| 219.5(f) Defined | (1) Recognition of Other Agencies' Objectives |
| Notice | (2) Assessment of Interrelated Impacts |
| 219.8(c) Public Notice of Proposed Action and Schedule | (3) Determination of How to Deal With These Impacts |
| 219.13(d) 60 Days Public Notice When Exceeding Harvest Cut Opening Sizes | (4) Conflicts and Alternatives for Resolution |
| Non-Wilderness | Planning Principles |
| 219.12(e) Non-Wilderness Lands | 219.1(b) Principles of Planning |
| (1) During Analysis of the Management Situation Evaluate the Following Areas: | (1) Interrelationships |
| (i) Inventoried Wilderness Not Yet Designated | (2) Relative Values |
| (ii) Areas Contiguous to Wilderness, Primitive, or Administratively Proposed Wilderness | (3) Goals and Objectives |
| (iii) Areas Contiguous to Roadless Areas With Wilderness Potential | (4) Protection |
| (iv) Legislatively or Administratively Proposed Areas | (5) Preservation |
| (2) Criteria for Wilderness Evaluation if Not Otherwise Stated | (6) Preserve American Indian Rights |
| (i) Wilderness Values | (7) Safe Use |
| (ii) Values Forgone | (8) Forest Pests |
| (iii) Feasibility of Management As Wilderness | (9) Coordination |
| (iv) Proximity to Other Wilderness Areas | (10) Interdisciplinary Approach |
| (v) Long Term Changes in Species, Plant and Animal Diversity Community | (11) Public Participation |
| | (12) Standards and Guidelines |
| | (13) Economic Efficiency |
| | (14) Responsiveness to Changing Conditions |
| | Policy |
| | 219.3(y) Definition |
| | Practices See Management |
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| | 219.8(d) Agreements on Procedural Measures With Governors |
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Process, Approval

219.9(c) Regional Plan Review by the Chief
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Forester

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219.7(e) Public Input Analysis

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219.3(aa) Definition

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219.3(bb) Definition

219.7(a) Purpose

219.7(b) Public Participation in the
Preparation of the Draft Environmental
Statement and Notice of Intent

219.7(c) Public Participation in the
Development, Revision, and Significant
Amendment of Plans; Media Notice

(1) Description of Proposed Action

(2) Description of Geographic Area Affected

(3) Issues Expected to be Discussed

(4) Kind, Extent, and Methods

(5) Times, Dates and Locations

(6) Forest Service Official to be Contacted

(7) Location and Availability of Documents

(d) Means to Effective Public Participation

(g) Summaries of Public Participation
Activities

219.10(e) Public Participation and
Coordination Activities

Public Planning

219.8 Coordination of Public Planning Efforts

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219.7(h) Public Notice of Public Participation
Activities

(i) Notifying Interested or Affected Parties

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219.3(cc) Definition

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219.12(i) Dispersed and Developed Recreation

(1) Forest Planning

(i) Physical and Biological Characteristics

(ii) Recreational Preferences

(iii) Recreation Opportunities

(2) Supply of Recreational Facilities

(3) Recreation Alternatives

(4) Formulation of Analysis of Alternatives

(5) Evaluation of Alternatives

(6) Land Ownership Patterns

(7) Off-Road Vehicle Use

Regional Analysis

219.10(g) Regional Analysis of the
Management Situation

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219.5 Regional and Forest Planning Process

219.9(a) Regional Plan

219.9(h) Regional Plan Content

(1) Major Public Issues and Management
Concerns

(2) Management Situation Summary

(3) Management Direction—Program, Goals
and Objectives

(4) Distribution of Regional Activities

(5) Management Standards and Guidelines

(6) Monitoring and Evaluation

(7) Appropriate References

(8) Interdisciplinary Team Members and
Qualifications

219.10(c) Regional Plans and the Assessment
and Program

Regional Planning Actions

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219.10(f) Data for Regional Planning

Regional Planning Procedure

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219.10(d) Establish Standards and Guidelines
for:

(1) Appropriate Systems of Silviculture

(2) Tree Openings Created by Even-Aged
Management

(3) Biological Growth Potential Used in
Determining Timber Capability

(4) Defining Management Intensity

(5) Transportation Corridors

(6) Air Quality

(7) Unit of Measure for Expressing Mean
Annual Increment

Responsibilities

219.9(b) Regional Level

(1) Draft Environmental Impact Statement
(DEIS)

(2) Final Environmental Impact Statement
(FEIS)

219.11(b) Forest Level

(1) Forest Supervisor

(2) Interdisciplinary Team

(i) DEIS

(ii) FEIS

Responsible Official

219.3(dd) Definition

219.5(b)(d)(h) Duties of

(i)(j)(k)

219.6(c)(d)

219.7(c)(d)(f)(j)

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219.14(a) Research Needs

219.14(b) Research Priorities

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219.12(m) Establishment through Forest
Planning

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219.7(m) 3-Month Review Period for DEIS

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219.15 Revision of Regulations

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219.2 Scope and Applicability

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Silvicultural See Even and Uneven-Aged

219.3(ee) Definition

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219.12(k) Water and Soil Management

(1) Current Water Uses

(2) Existing Impoundments, Transmission
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(3) Water Volumes

(4) Legal Requirements

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(6) Protective Measures

219.13(f) Conservation of Soil and Water
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219.3(gg) Definition

Sustained Yield

219.3(p) Definition (long-term capacity)

(hh) Definition (Sustained Yield of the
Several Products and Services)

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219.3(ii) Definition (Timber Harvest Schedule)

219.12(d) Harvest Schedule and Departures

(1) Determinations of the Quantity of Timber
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Schedule

(i) Planned Sales and Future Harvests

(ii) Guidelines

(A) Long Term Sustained Yield Capacity and
Base Harvest Schedule

(B) Departure Alternatives to the Base
Harvest Schedule

(C) Even-Aged Stands Scheduled to be
Harvested

(D) Perpetual Timber Harvest at the Long
Term Sustained Yield Capacity

(iii) Alternatives Providing for Departures
Will be Considered Only When Departure
is Consistent With Stated Multiple Use
Management Objectives

(2) Selected Harvest Schedule Provides the
Allowable Sale Quantity

219.13(h) Timber Harvest and Cultural
Treatments

(1) No Timber Harvesting on Lands Classified
as Not Suited for Timber Production

- (2) Allowable Sale Quantity
- (3) 5 Year Restocking Requirement
- (4) Cultural Treatments Included in the Forest Plan
- (5) Decreasing Harvest Levels
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- (7) No Harvest Where Such Treatment Would Favor an Abnormal Increase in Injurious Insects and Disease Organisms

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- 219.3(jj) Definition
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- (i) Not Legislatively or Administratively Withdrawn
- (ii) Biological Growth Potential
- (iii) Technology Available to Insure Timber Production Without Irreversible Resource Damage
- (2) Determine Potential Economic Efficiency in Commercial Timber Production
- (i) Direct Benefits
- (ii) Direct Costs
- (iii) Economic Efficiency Analysis
- (3) Each Alternative Consider Relative Economic Efficiency
- (4) Lands Tentatively Identified as Not Suited for Timber Production if:
- (i) Land Is Suitable for Uses That Preclude Timber Production
- (ii) Silvicultural Standards and Guidelines Cannot Be Met
- (iii) Lands are Not Cost Effective
- (5) Considerations for the Allocation of Lands

- Transition Period*
- 219.16 Use of Existing Plans

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- Uneven-Aged*
- 219.3(kk) Uneven-Aged Silviculture Definition

- Vegetation See Management*
- 219.12(c) Choice of Vegetation Management Practice
- 219.13(e) Special Attention to Land and Vegetation Near Perennial Streams, Lakes and Other Bodies of Water (approximately 100 feet)

- Water See Soil and Water*

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- 219.12(e) Criteria for Evaluation
- 219.12(f) Direction for the Management of Designated Wilderness and Primitive Areas
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PART 219—PLANNING

Subpart A—National Forest System Land and Resource Management Planning

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- 219.2 Scope and Applicability.
- 219.3 Definitions.
- 219.4 Planning Levels.
- 219.5 Regional and Forest Planning Process.
- 219.6 Interdisciplinary Approach.
- 219.7 Public Participation.
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- 219.15 Revision of Regulations.
- 219.16 Transition Period.

Authority.—Secs. 6 and 15, 90 Stat. 2949, 2952, 2958 (16 U.S.C. 1604, 1613); and 5 U.S.C. 301.

Subpart A—National Forest System Land and Resource Management Planning

§ 219.1 Purpose.

(a) The regulations in this subpart set forth a process for developing, adopting, and revising land and resource management plans for the National Forest System. The purpose of the planning process is to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended (hereafter RPA) including procedures under the National Environmental Policy Act of 1969 (hereafter NEPA) for assessing economic, social, and environmental impacts. These regulations prescribe how land and resource management planning is to be conducted on National Forest System lands. The resulting plans will provide for multiple use and sustained yield of goods and services from the National Forest System.

(b) Plans guide all natural resource management activities and establish management standards and guidelines for the National Forest System. They determine resource management practices, harvesting levels and procedures under the principles of multiple use and sustained yield and the availability and suitability of lands for resource management. All levels of

planning will be based on the following principles:

- (1) That the National Forests are ecosystems and their management for goods and services requires an awareness of the interrelationships among plants, animals, soil, water, air, and other environmental factors within such ecosystems. Proposed management will consider these interrelationships;
- (2) Consideration of the relative values of all renewable resources, including the relationship of mineral resources to these renewable resources;
- (3) Establishment of goals and objectives for the sustained yield of products and services resulting from multiple-use management without impairment of the productivity of the land;
- (4) Protection and, where appropriate, improvement of the quality of renewable resources;
- (5) Preservation of important historic, cultural and natural aspects of our national heritage;
- (6) Protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise their traditional religions;
- (7) Provision for the safe use and enjoyment of the forest resources by the public;
- (8) Protection of all forest and rangeland resources from depredations by the forest pests, using ecologically compatible means;
- (9) Coordination with the land and resource planning efforts of other Federal agencies, State and local governments, Indian tribes, and adjacent private landowners;
- (10) A systematic, interdisciplinary approach to ensure coordination and integration of planning activities for multiple-use management;
- (11) Early and frequent public participation;
- (12) Establishment of quantitative and qualitative standards and guidelines for land and resource planning and management;
- (13) Management of National Forest System lands in a manner that is sensitive to economic efficiency; and
- (14) Responsiveness to changing conditions in the land and changing social and economic demands of the American people.

§ 219.2 Scope and applicability.

The regulations in this subpart apply to the lands and waters in the National Forest System. Planning requirements for managing special areas, such as wilderness, wild and scenic rivers, national recreation areas, and national trails, will be included in land and resource management planning pursuant to these regulations. Whenever the special area authorities require additional planning, those authorities will control in implementing the planning process under this subpart.

§ 219.3 Definitions.

For purposes of this subpart the following words shall have these meanings:

(a) "Allowable sale quantity": The quantity of timber that may be sold from the area of land covered by the forest plan for a time period specified by the plan. This quantity is usually expressed on an annual basis as the average annual allowable sale quantity.

(b) "Assessment": The Renewable Resource Assessment required by the RPA.

(c) "Base timber harvest schedule": The Timber Harvest Schedule in which the planned sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade of the planning period and this planned sale and harvest for any decade is not greater than long-term sustained yield capacity.

(d) "Biological growth potential": The average net growth attainable in a fully stocked natural area of forest land.

(e) "Capability": The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity.

Capability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology, as well as the application of management practices, such as silviculture or protection from fire, insects, and disease.

(f) "Corridor": A linear strip of land which has ecological, technical, economic, social, or similar advantages over other areas for the present or future location of transportation or utility rights-of-way within its boundaries.

(g) "Diversity": The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

(h) "Economic efficiency analysis": A comparison of the values of resource inputs (costs) required for a possible course of action with the values of

resource outputs (benefits) resulting from such action. In this analysis, incremental market and nonmarket benefits are compared with investment and physical resource inputs.

(i) "Environmental analysis": An analysis of alternative actions and their predictable short- and long-term environmental effects, which include physical, biological, economic, social, and environmental design factors and their interactions. Environmental assessment is the concise public document required by the regulations for implementing the procedural requirements of NEPA, (40 CFR 1508.9).

(j) "Environmental documents": A set of concise documents to include, as applicable, the environmental assessment, environmental impact statement, finding of no significant impact, or notice of intent.

(k) "Even-aged silviculture": The combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and therefore tree sizes) throughout the forest area. Regeneration in a particular stand is obtained during a short period at or near the time that the stand has reached the desired age or size and is harvested. Clearcutting, shelterwood cutting, seed tree cutting, and their many variations are the cutting methods used to harvest the existing stand and regenerate a new one. In even-aged stands, thinnings, weedings, cleanings, and other cultural treatments between regeneration cuts are often beneficial. Cutting is normally regulated by scheduling the area of harvest cutting to provide for a forest that contains stands having a planned distribution of age classes.

(l) "Goal": A concise statement of the state or condition that a land and resource management plan is designed to achieve. A goal is usually not quantifiable and may not have a specific date for completion.

(m) "Goods and services": The various outputs produced by forest and rangeland renewable resources. The tangible and intangible values of which are expressed in market and nonmarket terms.

(n) "Guideline": An indication or outline of policy or conduct.

(o) "Integrated pest management": A process in which all aspects of a pest-host system are studied and weighed to provide the resource manager with information for decisionmaking. Integrated pest management is, therefore, a part of forest or resource management. The information provided includes the impact of the unregulated

pest population on various resources values, alternative regulatory tactics and strategies, and benefit/cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system. Strategies consist of a combination of tactics such as stand improvement plus selected use of pesticides. The overriding principle in the choice of strategy is that it is ecologically compatible or acceptable.

(p) "Long-term sustained yield capacity": The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified intensity of management consistent with multiple-use objectives.

(q) "Management concern": An issue or problem requiring resolution, or condition constraining management practices identified by the interdisciplinary team.

(r) "Management direction": A statement of multiple-use and other goals and objectives, the management prescriptions, and the associated standards and guidelines for attaining them.

(s) "Management intensity": The relative cost of a possible management direction and/or management practice.

(t) "Management practice": A specific action, measure, or treatment.

(u) "Management prescription": Management practices selected and scheduled for application on a specific area to attain multiple-use and other goals and objectives.

(v) "Multiple use": "The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output." (16 U.S.C. 531(a))

(w) "Objective": A specific statement of measurable results to be achieved within a stated time period. Objectives reflect alternative mixes of all outputs or

achievements which can be attained at a given budget level. Objectives may be expressed as a range of outputs.

(x) "Planning area": The area covered by a Regional or Forest Plan.

(y) "Policy": A guiding principle upon which is based a specific decision or set of decisions.

(z) "Program": The Renewable Resource Program required by the RPA.

(aa) "Public issue": A subject or question of widespread public interest relating to management of National Forest System lands identified through public participation.

(bb) "Public participation activities": Meetings, conferences, seminars, workshops, tours, written comments, response to survey questionnaires, and similar activities designed and held to obtain comments from the general public and specific publics about National Forest System land management planning.

(cc) "Real dollar value": A value from which the effect of change in the purchasing power of the dollar has been removed.

(dd) "Responsible official": The Forest Service employee who has been delegated the authority to carry out a specific planning action.

(ee) "Silvicultural system": A combination of interrelated actions whereby forests are tended, harvested, and replaced. The combination of management practices used to manipulate the vegetation results in forests of distinctive form and character, and this determines the combination of multiple resource benefits that can be obtained. Systems are classified as even-aged and uneven-aged.

(ff) "Standard": A principle requiring a specific level of attainment, a rule to measure against.

(gg) "Suitability": The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

(hh) "Sustained-yield of the several products and services": "The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forest without impairment of the productivity of the land." (16 U.S.C. 531(b))

(ii) "Timber harvest schedule": The quantity of timber planned for sale and harvest, by time period, from the area of land covered by the forest plan. The first period, usually a decade, of the selected

harvest schedule provides the allowable sale quantity. Future periods are shown to establish that sustained yield will be achieved and maintained.

(jj) "Timber production": The growing, tending, harvesting and regeneration of regulated crops of industrial wood. Industrial wood includes logs, bolts or other round sections cut from trees for industrial or consumer use, except fuelwood.

(kk) "Uneven-aged silviculture": The combination of actions that result in the creation of forests in which trees of several or many ages may grow together. Managed uneven-aged forests may take several forms depending upon the particular cutting methods used. In some cases, the forest is essentially similar throughout, with individual trees of many ages and sizes growing in close association. In other cases, small groups of trees of similar age may be intermingled with similar groups of different ages; although the groups are even aged, they are not recorded separately. Finally, an uneven-aged forest may contain two or three distinct age classes on the same area, creating a storted forest. Under uneven-aged silviculture, regeneration is obtained several or many times during the period required to grow an individual tree to maturity. Single-tree selection cutting, group selection cutting, and other forms of partial cutting are used to harvest trees, obtain regeneration, and provide appropriate intermediate culture. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Scheduling by area harvest is often used as well.

§ 219.4 Planning levels.

(a) The planning process requires a continuous flow of information and management direction among the three Forest Service administrative levels: national, regional, and designated forest planning area. Management direction will be based principally upon locally derived information about production capabilities; reflect conditions and circumstances observed at all levels; and become increasingly specific as planning progresses from the national to regional level, and from the regional to designated forest planning area. In this structure, regional planning is the principal process for conveying management direction from the national level to designated forest planning areas and for conveying information from such areas to the national level.

(b) Planning levels and relationships are set forth in paragraphs (b) (1) through (3) of this section.

(1) *National.* The Chief, Forest

Service, will develop the Assessment which will include an analysis of present and anticipated uses, demand for, and supply of the renewable resources of forest, range, and other associated lands with consideration, and an emphasis on, pertinent supply and demand and price relationship trends; an inventory of present and potential renewable resources and an evaluation of opportunities for improving their yield of tangible and intangible goods and services, together with estimates of investment costs and direct and indirect returns to the Federal Government; a description of Forest Service programs and responsibilities in research, cooperative programs, and management of the National Forest System; and analysis of important policy issues and consideration of laws, regulations, and other factors expected to influence and affect significantly the use, ownership, and management of forest, range, and other associated lands. This assessment will be based on the future capabilities for each forest and regional planning area. Based on the Assessment which will include information generated during the regional and forest planning process, the Chief will develop alternative Programs. In formulating those alternatives the costs of supply and the relative values of both market and nonmarket outputs will be considered. The alternatives will include national renewable resource goals, quantified objectives, resource outputs and represent a range of expenditure levels sufficient to demonstrate full opportunities for management. A portion of each national goal and objective, expressed in the selected Program as a range of outputs, will be assigned to each region and be incorporated into each regional plan. The objectives assigned to each region will be based on local supply capabilities and market conditions. Economic efficiency and potential environmental effects will be considered in these assignments.

(2) *Regional.* Each regional forester will develop a regional plan in accordance with the procedures, standards, and guidelines specified in this subpart. The required planning process is established in § 219.5. Procedural requirements for regional plans are established in §§ 219.9 and 219.10, and resource management standards and guidelines are set forth in § 219.13. The regional planning process will respond to and incorporate the Program direction established by the Chief, Forest Service, under paragraph (b)(1) of this section. Regional objectives will be assigned to designated forest planning areas. These assignments will be based upon: supply capabilities,

socio-economic assessments, potential environmental effects, economic efficiency criteria, community stability objectives, and resource management standards and guidelines which have been established by the planning process. The regional forester may request adjustment of assigned regional objectives prior to their incorporation into the plan. Any adjustment will require the approval of the Chief, Forest Service.

(3) *Forest.* Forest plans will be developed for all lands in the National Forest System in accordance with the procedures, standards, and guidelines specified in this subpart. The planning process is established in § 219.5, and procedures are set forth in §§ 219.11 and 219.12. Resource management standards and guidelines are established in § 219.13. One forest plan may be prepared for all lands for which a forest supervisor has responsibility, or separate forest plans may be prepared for each national forest, or combination of national forests, within the jurisdiction of a single forest supervisor. These forest plans will constitute the land and resource management plans developed in accordance with §§ 8 and 13 of the RPA, as amended, and will include all management planning for resources. Forest plans will address the goals and objectives established by the regional plan. The objectives assigned to each forest will be evaluated in order to assure that they are compatible with local supply and demand, economic efficiency, community stability, and potential environmental effects. Based upon this evaluation, the forest supervisor may request adjustment of assigned objectives prior to their incorporation into the forest plan. Any such adjustment requires the approval of the regional forester.

§ 219.5 Regional and Forest Planning Process.

(a) *General planning approach.* The NEPA environmental analysis process will be included in the process for development of a regional or forest plan. Except where the planning process requires additional action, a single process will be used to meet the planning requirements and the NEPA process. The planning process adapts to changing conditions by identifying public issues, management concerns, and use and development opportunities. It consists of a systematic set of interrelated actions which include at least those set forth in paragraphs (b) through (k), of this section that lead to management direction. Planning actions, in addition to those in this section may be necessary in particular situations. Some actions may occur simultaneously, and it may be necessary to repeat an

action as additional information becomes available.

(b) *Identification of issues, concerns, and opportunities.* The interdisciplinary team will identify and evaluate public issues, management concerns, and resource use and development opportunities, including those identified through public participation activities and coordination with other Federal agencies, State and local governments, and Indian tribes throughout the planning process. All public issues and management concerns are investigated and evaluated in order of their apparent importance. The responsible official will determine the major public issues, management concerns, and use and development opportunities to be addressed in the planning process.

(c) *Planning criteria.* Criteria will be prepared to guide the planning process and management direction. Process criteria may apply to collection and use of inventory data and information, analysis of the management situation, and the design and formulation of alternatives. Decision criteria will be developed and used to evaluate alternatives and to select one alternative to serve as the proposed plan. All criteria, including any revisions, will be developed by the interdisciplinary team and approved by the responsible official. Generally, criteria will be based on:

(1) Laws, executive orders, regulations, and Forest Service Manual policy;

(2) Goals and objectives in the Program and regional plans;

(3) Recommendations and assumptions developed from public issues, management concerns, and resource use and development opportunities;

(4) The plans and programs of other Federal agencies, State and local governments and Indian tribes;

(5) Ecological, technical and economic factors;

(6) Guidelines for economic analysis practices, including standards for benefits and costs, and the discount rate of interest will be established by the Chief, Forest Service, and become effective within one year after final publication of these planning rules in the *Federal Register*; and

(7) The resource management standards and guidelines in § 219.13.

(d) *Inventory data and information collection.* Each responsible official will obtain and keep current inventory data appropriate for planning and managing the resources under his or her administrative responsibility, and will assure that the interdisciplinary team has access to the best available data, which may require that special inventories or studies be prepared. The

interdisciplinary team will collect, assemble, and use data, maps, graphic material, and explanatory aids, of a kind, character, and quality, and to the detail appropriate for the management decisions to be made. Existing data will be used in planning unless such data is inadequate. Data and information needs may vary as planning problems develop from identification of public issues, management concerns, and resource use and development opportunities.

Acquisitions of new data and information will be scheduled and planned as needed. Methods used to gather data will be consistent with those used to monitor consequences of activities resulting from planning and management. Data will be stored for ready retrieval and comparison and periodically will be evaluated for accuracy and effectiveness. Common data definitions and standards to assure uniformity of information between all planning levels will be established by the Chief, Forest Service. As information is recorded using common data definitions and standards, it will be applied in any subsequent planning process. Information developed from common data definitions and standards will be used in the preparation of the 1990, and subsequent Assessments and Programs.

(e) *Analysis of the management situation.* The analysis of the management situation is a determination of the ability of the planning area covered by the Regional or Forest Plan to supply goods and services in response to society's demand for those goods and services. The analysis will display the capability to supply outputs and uses, and projected demands for the outputs or uses over time. It will identify any special conditions or situations which involve hazards to the resources of the planning area and their relationship to proposed and possible actions being considered. The analysis will determine:

(1) Ranges of various goods, services and uses that are feasible under existing conditions at various levels of management intensity;

(2) Projections of demand, using best available techniques, with both price and non-price information which, in conjunction with supply cost information, will be used to evaluate the level of goods and services that maximizes net public benefits; to the extent possible, demand will be assessed as a price-quantity relationship;

(3) Potential to resolve public issues and management concerns;

(4) Technical, economic, and environmental feasibility of providing the levels of goods, services, and uses

resulting from assigned goals and objectives; and

(5) The need, as a result of this analysis, to establish or change management direction.

(f) *Formulation of alternatives.* A reasonable range of alternatives as provided for in paragraphs (1) and (2) of this paragraph, will be formulated by the interdisciplinary team to provide different ways to address and respond to the major public issues, management concerns, and resource opportunities identified during this planning process. Alternatives will be described in draft and final environmental impact statements.

(1) Alternatives will reflect a range of resource outputs and expenditure levels. In formulating these alternatives, the following criteria will be met:

(i) Each alternative will be capable of being achieved;

(ii) A no-action alternative will be formulated, that is the most likely condition expected to exist in the future if current management direction would continue unchanged;

(iii) Each alternative will provide for the orderly elimination of backlogs of needed treatment for the restoration of renewable resources as necessary to achieve the multiple-use objectives of that alternative.

(iv) Each identified major public issue and management concern will be addressed in one or more alternatives; and

(v) Each alternative will represent to the extent practicable the most cost efficient combination of management practices examined that can meet the objectives established in the alternative;

(2) Each alternative will state at least:

(i) The condition and uses that will result from long-term application of the alternative,

(ii) The goods and services to be produced, and the timing and flow of these resource outputs;

(iii) Resource management standards and guidelines; and

(iv) The purposes of the management direction proposed.

(g) *Estimated effects of alternatives.* The interdisciplinary team will estimate and display the physical, biological, economic, and social effects of implementing each alternative including how the plan responds to the range of goals and objectives assigned to it from the RPA Program. These effects will include at least the following:

(1) The expected outputs for the planning periods, including appropriate marketable goods and services, as well as non-market items, such as protection and enhancement of soil, water and air,

and preservation of aesthetic and cultural resource values;

(2) The relationship between local, short-term uses of the renewable resources and the maintenance and enhancement of long-term productivity;

(3) The adverse environmental effects which cannot be avoided;

(4) Resource commitments that are irreversible and irretrievable;

(5) Effects on minority groups and civil rights;

(6) Effects on prime farmlands, wetlands and flood plains;

(7) The relationship of expected outputs to the forest goals given in the current regional plan;

(8) The energy requirements and consideration of potential effects of various alternatives; and

(9) Direct and indirect benefits and costs, estimated in accordance with paragraph (c)(6) of this section, analyzed in sufficient detail to:

(i) Determine the expected real-dollar investment, administrative and operating costs of the plan;

(ii) Estimate the real-dollar value of all outputs attributable to each plan alternative to the extent that dollar values can be assigned to nonmarket goods and services using physical outputs or relative indices of value when such values may not be reasonably assigned and;

(iii) Evaluate the economic effects of alternatives, including the distribution of goods and services, the payment of taxes and charges, receipt shares, payments to local government, and income and employment in affected communities.

(h) *Evaluation of alternatives.* The interdisciplinary team will evaluate the significant physical, biological, social, economic and environmental design effects of each management alternative according to the planning decision criteria. The evaluation will include a comparative analysis of the management alternatives and will compare economic efficiency and distributional aspects, outputs of goods and services, and protection and enhancement of environmental resources. The responsible official will review the interdisciplinary team's evaluation and will recommend a preferred alternative or alternatives to be identified in the draft environmental impact statement.

(i) *Selection of alternative.* After publication of the draft environmental impact statement, the interdisciplinary team will evaluate public comments and, as necessary, revise the appropriate alternative. The responsible official will recommend a selected alternative for the final environmental impact statement using the decision

criteria developed pursuant to paragraph (c) of this section. The official will document the selection with a description of the benefits, relative to other alternatives as described in paragraph (h) of this section.

(j) *Plan implementation.* During the implementation of each plan the following requirements, as a minimum, will be met:

(1) The responsible official will assure that annual program proposals and implemented projects are in compliance with the plan;

(2) Program budget allocations meet the objectives and are consistent with all applicable standards and guidelines specified in the plan; and

(3) Plan implementation is in compliance with §§ 219.9(d) and 219.11(d).

(k) *Monitoring and evaluation.* At intervals established in the plan, management practices will be evaluated on a sample basis to determine how well objectives have been met and how closely management standards and guidelines have been applied. The results of monitoring and evaluation may be used to analyze the management situation during revision of the plan as provided in paragraphs (k) (1), (2) and (3) of this section.

(1) The plan will describe the following monitoring activities:

(i) The actions, effects, or resources to be measured, and the frequency of measurements;

(ii) Expected precision and reliability of the monitoring process; and

(iii) The time when evaluation will be reported.

(2) Evaluation reports will contain for each monitored management practice at least a quantitative estimate of performance comparing outputs and services and their costs with those projected by the plan and documentation of evaluated measured effects.

(3) Based upon the evaluation reports, the responsible official will make changes in management direction, or revise or amend the plan as necessary to meet the goals and objectives.

§ 219.6 Interdisciplinary Approach.

(a) A team representing several disciplines will be used at each level of planning to insure coordinated planning which addresses outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness opportunities. The team is to coordinate and integrate planning activities consistent with the principles of the Multiple-Use Sustained-Yield Act of 1960 and § 219.1 of this subpart. Through interactions among its members, the team will integrate knowledge of the physical,

biological, economic and social sciences, and environmental design arts in the planning process. Team functions include, but are not limited to:

(1) Assessing the problems and resource use and development opportunities associated with providing of goods and services;

(2) Obtaining the public's views about possible decisions;

(3) Coordinating planning activities within the Forest Service and with local, State and other Federal agencies;

(4) Developing the land and resource management plan and associated environmental impact statement pursuant to the planning process;

(5) Giving the responsible official an integrated perspective on land and resource management planning; and

(6) Establishing monitoring and evaluation standards and requirements for planning and management activities.

(b) The team will be composed of Forest Service personnel who collectively represent diverse specialized areas of professional and technical knowledge about natural resource management applicable to the area being planned. The team will consider problems collectively, rather than separating them along disciplinary lines. The team is encouraged to consult persons other than Forest Service employees when required specialized knowledge does not exist within the team itself.

(c) The responsible official, in appointing team members, will determine and consider the qualifications of each team member on the basis of the complexity of the issues and concerns to be resolved through the plan. Each team member will, as a minimum, either have successfully completed a course of study in a college or university leading to a bachelor's or higher degree in one or more specialized areas of assignment or have recognized expertise and experience in professional investigative, scientific, or other responsible work in specialties which members represent. In addition to technical knowledge in one or more resource specialties, members should possess other attributes which enhance the interdisciplinary process that, as a minimum, should include:

(1) An ability to solve complex problems;

(2) Skills in communication and group interaction;

(3) Basic understanding of land and natural resource planning concepts, processes, and analysis techniques; and

(4) The ability to conceptualize planning problems and feasible solutions.

(d) The responsible official will appoint a leader of the interdisciplinary team. Team leadership should be assigned to individuals possessing both a working knowledge of the planning process and the ability to communicate effectively with team members. The team leader will coordinate the specialists, focusing their attention on team goals.

§ 219.7 Public Participation.

(a) Because the land and resource management planning process determines how the lands of the National Forest System are to be managed, the public is encouraged to participate throughout the planning process. The intent of public participation is to:

(1) Ensure that the Forest Service understands the needs and concerns of the public;

(2) Inform the public of Forest Service land and resource planning activities;

(3) Provide the public with an understanding of Forest Service programs and proposed actions;

(4) Broaden the information base upon which land and resource management planning decisions are made; and

(5) Demonstrate, that public issues and inputs are considered and evaluated in reaching planning decisions.

(b) Public participation in the preparation of draft environmental impact statements for planning begins with the publication of a notice of intent in the *Federal Register*. After this publication, all public participation for land and resource management planning will be coordinated with that required by the NEPA and its implementing regulations.

(c) Public participation, as deemed appropriate by the responsible official, will be used early and often throughout the development, revision, and significant amendment of plans. Public participation activities will begin with a notice to the news media, which includes as appropriate the following information:

(1) The description of the proposed planning action;

(2) The description and map of the geographic area affected;

(3) The issues expected to be discussed;

(4) The kind, extent, and method(s) of public participation to be used;

(5) The times, dates, and locations scheduled or anticipated, for public meetings;

(6) The name, title, address, and telephone number of the Forest Service official who may be contacted for further information; and

(7) The location and availability of documents relevant to the planning process.

(d) Public participation activities should be appropriate to the area and people involved. Means of notification should be appropriate to the level of planning. Public participation activities may include, but are not limited to, requests for written comments, meetings, conferences, seminars, workshops, tours, and similar events designed to foster public review and comment. To ensure effective public participation, the objectives of participation activities will be defined beforehand by the interdisciplinary team. The Forest Service will state the objectives of each participation activity to assure that the public understands what type of information is needed and how this information relates to the planning process. The responsible official and interdisciplinary teams will consult and be guided by Forest Service Handbook 1626.

(e) Public comments will be analyzed individually, and by type of group and organization to determine common areas of concern and geographic distribution. The results of this analysis will be evaluated to determine the variety and intensity of viewpoints about ongoing and proposed planning, and management standards and guidelines. Conclusions about comments will be used to the extent practicable in decisions that are made.

(f) The primary purpose of public participation is to broaden the information base upon which planning decisions are made. Public participation activities also will help in monitoring and evaluation of implemented plans. Suitable public participation formats, requirements, and activities will be determined by the responsible official.

(g) All scheduled public participation activities will be documented by a summary of the principal issues discussed, comments made, and a register of participants.

(h) At least 30 days' public notice will be given for public participation activities associated with the development of national or regional plans. At least 15 days' public notice will be given for activities associated with forest plans. Any notice requesting written comments on national and regional planning will allow at least 90 calendar days for responses. A similar request about forest planning will allow at least 30 calendar days for responses.

(i) A list of individuals and groups known to be interested in or affected by the plan will be maintained. They will be notified of public participation activities.

(j) The responsible official, or his representative, will attend or provide for adequate representation at public participation activities.

(k) Copies of approved plans will be available for public review, as follows:

(1) The Assessment and the Program will be available at national headquarters, each regional office, each forest supervisor's office, and each district ranger's office;

(2) The regional plan will be available at national headquarters, that regional office and regional offices of contiguous regions, each forest supervisor's office of forests within and contiguous to that region, and each district ranger's office in that region;

(3) The forest plan will be available at the regional office for that forest, that forest supervisor's office and forest supervisors' offices contiguous to that forest, each district ranger's office in that forest, those district rangers' offices in other forests that are contiguous to that forest, and at least one additional location determined by the forest supervisor, which will offer convenient access to the public; and

(4) The above plans may be made available at other locations convenient to the public.

(l) Documents considered in the development of plans will be available at the office where the plans were developed.

(m) Upon issuance of a draft environmental impact statement on a plan, revision, or significant amendment, and concurrent with the public participation activities of this section, the public will have a 3-month period to review the statement for the proposed plan, revision, or significant amendment. During that time, additional public participation activities will take place to review the actions proposed in the draft environmental impact statement.

(n) Fees for reproducing requested documents will be charged according to the Secretary's Fee Schedule (7 CFR Part I, Subpart A, Appendix A).

§ 219.8 Coordination of Public Planning Efforts.

(a) Efficient management of the resources of the National Forest System results from planning that is coordinated among all levels of government, including other Federal agencies, State and local governments, and Indian tribes. Such coordination ensures that government objectives, policies, and programs for resource management are compatible to the extent possible. Therefore, the Forest Service will coordinate its national, regional, and forest planning with the equivalent and related planning efforts of other Federal

agencies, State and local governments, and Indian tribes.

(b) The responsible official, through the interdisciplinary team, will coordinate Forest Service planning with land and resource management planning of other affected government entities and Indian tribes to ensure that planning includes:

(1) Recognition of the objectives of other Federal, State and local governments, and owners of intermingled and adjacent private lands, as expressed in their plans and policies;

(2) An assessment of the interrelated impacts of these plans and policies;

(3) A determination of how each Forest Service plan should deal with the impacts identified; and

(4) Where conflicts are identified, consideration of alternatives for their resolution.

(c) The responsible official will give notice of the preparation, revision, or significant amendment of a land and resource management plan, along with a general schedule of anticipated planning actions, to the State Clearinghouse (OMB Circular A-95) for circulation among State agencies. The same notice will be mailed to all Tribal or Alaska Native leaders whose tribal lands may be impacted, and to the heads of county boards for the counties that are involved. These notices will be issued simultaneously with the public notice required in § 219.7(b).

(d) To facilitate coordination with State governments, regional foresters will seek agreements with Governors or their designated representatives on procedural measures such as exchanging information, providing advice and participation, and time frames for receiving State government input and review. If an agreement is not reached, the regional forester will provide an opportunity for Governor and State agency review, advice, and suggestion on guidance that the regional forester believes could affect or influence State government programs.

(e) The responsible official in developing land and resource plans, will meet with the designated State official (or designee), representatives of other Federal agencies and Indian tribal governments at the beginning of the planning process to develop procedures for coordination. As a minimum, such conferences will also be held after public issues and management concerns have been identified and prior to recommending the selected alternative. Such conferences may be held in conjunction with other public participation activities, provided that the opportunity for government officials

to participate in the planning process is not thereby reduced.

(f) The responsible official will review the planning and land use policies of other Federal agencies, State and local governments and Indian tribes. The intensity of the review will be appropriate to the planning level and requirements of the envisioned plan. This review will include, but not be limited to, plans affecting renewable natural resources, minerals, community and economic development, land use, transportation, water and air pollution control, cultural resources, and energy. The planning records will document this review.

(g) The responsible official, in the development of forest plans and to the extent feasible, will notify the owners of lands that are intermingled with, or dependent for access upon, national forest lands. Planning activities should then be coordinated to the extent feasible with these owners. The results of this coordination will be included in the plan as part of the review required in paragraph (f) of this section.

(h) The responsible official, in developing the forest plan, will seek input from other Federal, State and local governments and universities, to help resolve management concerns in the planning process and to identify areas where additional research is needed. This input should be included in the discussion of the research needs of the designated forest planning area.

(i) A program of monitoring and evaluation will be conducted that includes consideration of the effects of national forest management on land, resources, and communities adjacent to or near the national forest being planned and the effects upon national forest management of activities on nearby lands managed by other Federal or government agencies or under the jurisdiction of local governments.

§ 219.9 Regional Planning Procedure.

(a) *Regional plan.* Regional planning will provide national forests (forest planning areas) with goals and objectives, regional issue resolution, and program coordination for National Forest System, State and Private Forestry, and Research. A plan will be developed for each administratively designated region in the National Forest System. The preparation of a regional plan, revision, or significant amendment will comply with the requirements of the planning process established in §§ 219.5 and 219.10 and this section.

(b) *Responsibilities.* The Chief, Forest Service, will establish agency-wide policy for regional planning and approve all regional plans, revisions, or

significant amendments. The regional forester will be responsible for the preparation of the regional plan, and revisions or significant amendments to the regional plan. The regional interdisciplinary team will develop a regional plan using the process established in § 219.5 which shall include the steps in paragraphs (b) (1) and (2) of this section.

(1) A draft environmental impact statement will be prepared, describing the proposed plan, revision, or significant amendment. A notice of intent to prepare this statement will be issued in the *Federal Register*. The draft statement will identify a preferred alternative. Beginning at the time of notification of availability of the draft environmental impact statement in the *Federal Register*, the statement will be available for public comment for at least 90 days at convenient locations in the vicinity of the lands covered by the plan, revision, or significant amendment. During this period, and in accordance with the provisions in § 219.7, the responsible official will publicize and hold public participation activities as deemed appropriate for adequate public input.

(2) A final environmental impact statement will be prepared, and after the regional forester has reviewed and concurred in the statement, the regional forester will recommend to the Chief, Forest Service that it be filed with the Environmental Protection Agency. At least 30 days are required between the date of notice of filing of the final environmental impact statement and the decision to implement actions specified in the plan, revision, or significant amendment. The plan, revision, or significant amendment will be based on the selected alternative.

(c) Plan approval. The Chief, Forest Service, will review the proposed plan, revision, or significant amendment and the final environmental impact statement and take either of the actions in paragraphs (c)(1) and (2) of this section.

(1) Approve the plan. If approved, the plan will not become effective until at least 30 days after publication of the notice of the filing of the final environmental impact statement. The Chief, Forest Service, will attach to the final environmental impact statement a concise public record of decision which documents the approval. The record of decision will accomplish the following:

- (i) State the decision;
- (ii) Identify all alternatives considered in making the decision on the plan, revision, or significant amendment;
- (iii) Specify the selected alternative;

(iv) Identify and discuss all factors considered by the Forest Service in making the planning decision, including how such factors entered into its decision; and

(v) State whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adapted, and, if not, why they were not.

(2) Disapprove the plan, and return it to the regional forester with a written statement of the reasons for disapproval. The Chief, Forest Service may also specify a course of action to be undertaken by the regional forester in order to remedy the deficiencies, errors, or omissions of the plan or environmental impact statement.

(3)(i) The approval or disapproval of a regional plan, revision, or significant amendment, or reconsideration under paragraph (ii) of this paragraph, is not subject to review under § 211.19 of this chapter or any other administrative appeal procedure. This exclusion does not apply to appeals or decisions to be taken under the regional plan on the grounds of nonconformity or to appeals of decisions taken under the plan which are appealable grievances under § 211.19 of this chapter.

(ii) Any person may request the Chief, Forest Service, to reconsider the decision to approve or disapprove a regional plan, revision, or significant amendment. A written request for reconsideration must be filed within 45 days of the time of the Chief's decision and must be accompanied by a written statement giving the reasons why the decision to approve or disapprove is erroneous and any factual information necessary to support these reasons. A written decision on the request for reconsideration will be made within 30 days of the receipt of the request and will state the reasons for the decision reached on the request.

(iii) Any person, either at the time of requesting reconsideration or prior to filing such a request, may request the Chief, Forest Service, to stay the decision approving or disapproving the regional plan, revision, or significant amendment providing a showing is made that, without a stay, implementation will result in irreversible harm or will have an immediate direct and adverse effect on the requesting party.

(d) *Conformity*. The regional forester will manage the national forest lands under his or her jurisdiction in accordance with the regional plan. The regional forester or area director will assure that all State and Private Forestry programs planned with the States or other governmental agencies

are coordinated with the regional plan. The research station director will use the regional plan to help identify research needs for National Forest System lands. Differences between annual budget proposals and actual funding allocations may require the regional forester to make changes in scheduling. When each regional plan is approved, each forest plan in that region will be revised or amended to bring it into conformity as soon as practicable. When each regional plan is revised or amended the affected forest plans will be revised or amended to conform as soon as practicable.

(e) *Amendment*. The regional forester may amend the regional plan through an environmental analysis which will be used to determine the significance of proposed amendments. If the analysis indicates the preparation of an environmental impact statement is necessary, the amending process will follow the same procedure as used in the preparation of the plan. If the amendment is determined not to be significant, it may be implemented by the responsible official after public notice. The regional plan will be reviewed for possible amendment in conjunction with the development of the Assessment and Program or whenever the funded and implemented program deviates significantly from the 5-year levels specified in the regional plan.

(f) *Revision*. The regional forester will determine by an analysis of the management situation whether a revision is necessary because conditions or the demands of the public in the region have changed significantly. Revision will not become effective until considered and approved in accordance with the requirements for the development and approval of a regional plan.

(g) *Planning records*. The regional forester and the interdisciplinary team will develop and maintain a system that records decisions and activities that result from the process of developing a regional plan, revision or significant amendment. This system will contain all planning records including a work plan to guide and manage planning, the procedures which were used in completing each planning action and the results of those actions. These records document the accomplishment of legal and administrative planning requirements. They include at least the draft environmental impact statement, final environmental impact statement, regional plan, and record of decision. The adequacy of the record system will be approved by the regional forester.

(h) *Regional plan content*. The following general format and content

outline is required for all regional plans. In addition, the regional forester may specify formats and require further content within the following outline appropriate to the planning needs of that region:

(1) A brief description of the major public issues and management concerns which are pertinent to the region, indicating the disposition of each issue or concern;

(2) A summary of the analysis of the regional management situation, including a brief description of the existing management situation, demand and supply projections for resource commodities and services, production potentials, and resource use and development opportunities;

(3) Description of management direction including programs, goals and objectives;

(4) A distribution of regional objectives to each of the forest planning areas, and additional objectives added to reflect specific regional needs;

(5) Management standards and guidelines and those specific standards and guidelines listed in § 219.10(d);

(6) Description of the monitoring and evaluation necessary to determine and report achievements and effects;

(7) Appropriate references to information used in development of the regional plan; and

(8) The names of interdisciplinary planning team members, together with a summary of each member's qualifications and areas of expertise;

(i) *Monitoring and evaluation.*

Monitoring and evaluation of planned actions and effects will be carried out in compliance with § 219.5(k). Monitoring and evaluation will include, but is not limited to:

(1) Management practices relating to regional or subregional programs;

(2) State and Private Forestry programs carried out in conjunction with states or other governmental agencies;

(3) Economic and social impact on regional publics;

(4) Resource outputs or environmental impacts which relate to areas more widespread than national forests or States;

(5) Research programs which are related to other research activities or ongoing management practices on a regional scale; and

(6) National Forest System programs.

§ 219.10 Regional Planning Actions.

(a) The regional interdisciplinary team, as directed by the regional forester, will follow the process and procedures established in §§ 219.5 through 219.9 in preparing the regional plan, revision, or significant amendment.

The appropriate planning actions of the regional planning process will be guided by at least the criteria provided in paragraphs (b) through (g) of this section. Additional planning criteria may be found in the guidelines for managing specific renewable resources set forth in the Forest Service Manual and Handbooks.

(b) In addition to public issues and management concerns identified through public participation and coordination, each regional plan will address issues and concerns referred from national or forest planning. Some management concerns that should be considered in regional and in forest planning are the needs to:

(1) Provide goods and services efficiently;

(2) Produce timber and wood fiber;

(3) Manage and utilize range resources and improve range grazing;

(4) Manage fire to improve and protect resources;

(5) Protect resources from disease, pests and similar threats;

(6) Enhance water quality and quantity, soil productivity, and restore watershed conditions;

(7) Adjust landownership as needed to support resource management goals;

(8) Provide various recreation options;

(9) Maintain or improve fish and wildlife habitats;

(10) Improve critical and essential habitats of threatened or endangered plant and animal species;

(11) Assess probabilities of mineral exploration and development for immediate and future needs, and consider non-renewable resources in the management of renewable natural resources;

(12) Construct, operate, and maintain transportation facilities;

(13) Identify, protect, and enhance the visual quality;

(14) Require corridors to the extent practicable, to minimize adverse environmental impacts caused by the proliferation of separate rights-of-way;

(15) Discover, manage, protect, and interpret cultural resource values which are qualified or may qualify for inclusion in the National Register of Historic Places;

(16) Identify typical examples of important botanic, aquatic, and geologic types, and protect them through establishment of research natural areas; and

(17) Provide for various wilderness management options.

(c) Consistent with regional and forest resource capabilities, regional plans will implement the goals and objectives of the RPA Program by establishing regional policies and goals, assigning

resource production objectives to each forest area to be covered by a Forest plan, and issuing needed guidelines for resolving the major public issues and management concerns which are identified through public participation and coordination activities. Information developed in regional plans will be made available to the National level Assessment and Program activity.

(d) Each regional plan will establish standards and guidelines for:

(1) Prescribing according to geographic areas, forest types, or other suitable classifications, appropriate systems of silviculture to be used within the region;

(2) The maximum size, dispersal, and size variation of tree openings created by the application of even-aged management and the state of vegetation that will be reached before a cutover area is no longer considered an opening, using factors enumerated in § 219.13(d);

(3) The biological growth potential to be used in determining the capability of land for timber production as required in § 219.12(b)(1)(ii);

(4) Defining the management intensity and utilization standards to be used in determining harvest levels for the region;

(5) Recommended transportation corridors and associated standards for forest planning, such as standards for corridors, for transmission lines, pipelines, and water canals. The designation of corridors is not to preclude the granting of separate rights-of-way over, upon, under, or through the public lands where the authorized official determines that confinement to a corridor is not appropriate;

(6) Identification of potential uses of available air quality increments (42 U.S.C. 7473(b)) and protection of the portion of the increment needed to implement forest plans; and

(7) Provision of a unit of measure for expressing mean annual increment as required in § 219.12(d)(1)(ii)(C).

(e) Public participation and coordination activities will be adapted to the circumstances of regional planning. Particular efforts will be made to involve regional and national representatives of interest groups. Coordination will stress involvement with appropriate Federal agencies, State and local governments, and Indian tribes. Regional foresters will seek agreements with Governors, or their designated representatives, on procedures for coordination in accordance with § 219.8(d).

(f) Data for regional planning will be based principally on information from forest planning, with other data provided by the States, other Federal

agencies, and private sources. Very little new data will be gathered through land and resource inventories. Data and information standards and guidelines established nationally will be followed in structuring and maintaining required data.

(g) The regional analysis of the management situation will, as appropriate, consider results of each forest's analysis of the management situation for that region.

§ 219.11 Forest Planning Procedure.

(a) *Forest Plan.* The preparation of a forest plan, revision, or significant amendment will comply with the requirements of the planning process established in §§ 219.5 and 219.12 and this section.

(b) *Responsibilities.* The forest supervisor and the interdisciplinary team are responsible for the activities set forth in paragraphs (b) (1) and (2) of this section.

(1) *Forest supervisor.* The forest supervisor has overall responsibility for the preparation and implementation of the forest plan and appoints and supervises the interdisciplinary team.

(2) *Interdisciplinary team.* The team will implement the public participation and coordination activities. The team will continue to function even though membership may change, and will monitor and evaluate planning results and recommended revisions and amendments. The interdisciplinary team will develop a forest plan, revision, or significant amendment using the planning process established in § 219.5, including the steps in paragraphs (b)(2)(i) and (ii) of this section.

(i) A draft environmental impact statement will be prepared, describing the proposed plan, revision, or significant amendment. A notice of intent to prepare this statement will be issued in the Federal Register. The draft statement will identify a preferred alternative. Beginning at the time of the publication of the notice of availability notification in the Federal Register, the statement will be available for public comment for at least 3 months, at convenient locations in the vicinity of the lands covered by the plan, revision, or significant amendment. During this period, and in accordance with the provisions in § 219.7, the responsible official will publicize and hold public participation activities as deemed appropriate for adequate public input.

(ii) A final environmental impact statement will be prepared, and after the forest supervisor has reviewed and concurred in the statement, the forest supervisor will recommend to the regional forester that it be filed with the

Environmental Protection Agency. At least 30 days are required between the date of notice of filing of the final environmental impact statement and the decision to implement actions specified in the plan, revision, or significant amendment. The plan, revision, or significant amendment will be based on the selected alternative.

(c) *Approval process.* The regional forester will review the proposed plan, revision, or significant amendment and the final environmental impact statement and take one of the actions in paragraphs (c)(1) through (3) of this section.

(1) Approve the plan. If approved, the plan will not become effective until at least 30 days after publication of the notice of the filing of the final environmental impact statement. At the time of filing the FEIS with the Environmental Protection Agency, the regional forester will attach to the Final Environmental Impact Statement a concise public record of decision which documents the approval. The record of decision will accomplish the following:

(i) State the decision;

(ii) Identify all alternatives considered in making the decision on the plan, revision, or significant amendment;

(iii) Specify the selected alternative;

(iv) Identify and discuss relevant factors considered by the Forest Service in making the planning decision, including how such factors entered into its decisions; and

(v) State whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and, if not, why they were not.

(2) Disapprove the plan which will be returned to the forest supervisor with a written statement of the reasons for disapproval. The regional forester may also specify a course of action to be undertaken by the forest supervisor in order to remedy the deficiencies, errors, or omissions of the plan or Environmental Impact Statement.

(3) Transmit to the Chief, Forest Service, for approval or disapproval, if the selected harvest schedule is not the base timber harvest schedule for the designated forest planning area as required in § 219.12(d)(2).

(4)(i) Persons who participated in the planning process, or who can show good reason why there were unable to participate, and who have an interest which is, or may be adversely affected by a decision to approve or disapprove a forest plan, revision, or significant amendment, may request a review of that decision. Intermediate decisions made during the planning process and prior to the approval or disapproval decision are not reviewable. If the party

requesting review participated in the planning process, administrative review is limited to those issues which the requesting party raised during participation in the planning process. Participation in the planning process means direct and documented involvement with the responsible official or the interdisciplinary team in the planning process described in § 219.5 of this subpart. Except as provided in this paragraph, the provisions and procedures which apply to administrative review under § 211.19 of this chapter apply to the review of decisions approving or disapproving a forest plan, revision, or significant amendment.

(ii) The reviewing officer will determine whether the deficiencies, errors, or omissions, found in the plan, revision, or significant amendment, are of such a nature as to require reconsideration. If reconsideration is necessary, the Chief, Forest Service, will remand the plan, revision, or significant amendment, to the Regional Forester with instructions as to how to proceed in the reconsideration.

(iii) Any person, either at the time of filing a request for review, or prior to filing such a request, may request the reviewing officer to stay a decision approving or disapproving the forest plan, revision, or significant amendment, providing a showing is made that, without a stay, implementation will result in irreversible action or irreparable harm or will have an immediate, direct and adverse effect on the requesting party.

(d) *Conformity.* As soon as practicable after approval of the plan, revision, or significant amendment, the forest supervisor will ensure that, subject to valid existing rights, all outstanding and future permits, contracts, cooperative agreements, and other instruments for occupancy and use of affected lands are in conformity with the plan. All subsequent administrative activities affecting such lands, including budget proposals, will be in compliance with the plan. The forest supervisor may change proposed scheduling to respond to minor differences between planned annual budgets and appropriated funds. Such scheduled changes will be considered an amendment to the forest plan, but will not require preparation of an environmental impact statement unless the changes significantly alter the relationship between levels of multiple-use goods and services projected under planned budget proposals as compared to those levels projected with actual appropriations. An environmental impact statement will be prepared if the

scheduling changes will result in significant adverse environmental impacts not taken into account in an existing environmental impact statement.

(e) *Amendment.* The responsible official may amend a plan through an environmental analysis or through the procedures established for the preparation and approval of the forest plan. Such an amendment will be deemed significant if the analysis indicates the need to prepare an environmental impact statement. If such a need is indicated, the amending process will follow the same procedure as in the preparation of the plan. If, based on the environmental analysis, the amendment is determined not to be significant, it may be implemented by the forest supervisor following appropriate public notification.

(f) *Revision.* A forest plan will be revised at least every 10 years, or more frequently whenever the forest supervisor determines that conditions or the demands of the public in the area covered by the plan have changed significantly. The interdisciplinary team may, through the monitoring and evaluation process, recommend a revision of the forest plan at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of a forest plan. The forest supervisor will review the conditions on the land covered by the plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.

(g) *Planning records.* The forest supervisor and interdisciplinary team will develop and maintain a system that records decisions and activities that result from the process of developing a forest plan, revision, or significant amendment. Records will be maintained that support analytical conclusions and alternative plans made by the team and approved by the forest supervisor throughout the planning process. Such supporting records provide the basis for the development of, revision, or significant amendment to the forest plan and associated environmental documents.

(h) *Forest plan content.* The forest plan is the selected alternative described in the Final Environmental Impact Statement. The plan will contain the following:

(1) A brief description of the major public issues and management concerns which are pertinent to the forest, indicating the disposition of each issue or concern;

(2) A summary of the analysis of the management situation, including a brief description of existing management situations, demand and supply conditions for resource commodities and services, production potentials, and use and development opportunities;

(3) Long-range policies, goals, and objectives, and the specific management prescriptions planned; to meet the policies and to achieve the multiple-use goals and objectives;

(4) Proposed vicinity, timing, standards and guidelines for proposed and probable management practices;

(5) Monitoring and evaluation requirements which are pertinent at the forest level;

(6) Appropriate references to information used in development of the forest plan; and

(7) Names of the interdisciplinary planning team members, together with a summary of each member's qualifications and primary responsibilities or contributions to the forest planning effort.

(i) *Monitoring and evaluation.* Monitoring and evaluation of planned actions and effects will be carried out in compliance with § 219.5(k) and paragraphs (i) (1) through (3) of this section. In addition, management practices associated with each of the resources planned will be evaluated with reference to the standards and guidelines contained in the forest plan through monitoring on an appropriate sample basis. Methods used to monitor consequences of activities resulting from planning and management practices will be consistent with those used to gather data and information.

(1) Monitoring requirements in the forest plan will include descriptions of:

(i) Activities, practices and effects that will be measured and the frequency of measurements;

(ii) Expected precision and reliability of the monitoring process; and

(iii) The time at which evaluation reports will be prepared.

(2) An evaluation report will be prepared for management practices monitored and will contain at least the following:

(i) A quantitative estimate of performance comparing outputs and services with those projected by the forest plan;

(ii) Documentation of measured effects, including any change in productivity of the land;

(iii) Recommendations for changes;

(iv) A list of needs for continuing evaluation of management systems and for alternative methods of management; and

(v) Unit costs associated with carrying out the planned activities as compared with unit costs estimated in the forest plan.

(3) Based upon the evaluation reports, the interdisciplinary team will recommend to the forest supervisor such changes in management direction, revisions, or amendments to the forest plan as deemed necessary.

§ 219.12 Forest Planning Actions.

(a) In the preparation of the proposed forest plan, revision, or significant amendment, the interdisciplinary team, as directed by the forest supervisor, will follow the planning process established in §§ 219.5 through 219.8, 219.11, and in this section. The criteria in paragraphs (b) through (m) of this section provide the minimum requirements to be considered if appropriate for the forest being planned. Additional planning criteria may be found in the guidelines for managing specific renewable resources set forth in the Forest Service Manual and Handbooks.

(b) Each forest plan will identify lands available, capable, and suitable for timber production and harvesting during the planning process in accordance with the planning criteria in paragraphs (1) through (4) of this paragraph.

(1) During the analysis of the management situation, data on all National Forest System lands will be reviewed and those lands meeting all of the requirements of paragraphs (b)(1) (i) through (iv) of this section will be tentatively identified as available, capable and suitable for timber production. Those lands that fail to meet any of these requirements will be designated as not suited for timber production.

(i) The land has not been legislatively withdrawn or administratively withdrawn by the Secretary or the Chief, Forest Service, from timber production.

(ii) The biological growth potential for the land is equal to or exceeds the minimum standard for timber production defined in the regional plan.

(iii) Technology is available that will ensure timber production from the land without irreversible resource damage to soils, productivity, or watershed conditions.

(iv) There is reasonable assurance that such lands can be adequately restocked as provided in § 219.13(h)(3).

(2) Lands that have been tentatively identified as available, capable, and suitable for timber production in paragraph (1) above will be further reviewed and assessed prior to formulation of alternatives to determine the costs and benefits for a range of

management intensities for timber production. For the purpose of analysis, the Forest will be stratified into categories of land with similar management costs and returns. The stratification should consider appropriate factors that influence the costs and returns such as physical and biological conditions of the site and transportation. This analysis will compare the direct costs of growing and harvesting trees to the anticipated receipts to the government, including capital expenditures required by timber production, in accordance with § 219.5 and paragraphs (i) through (iii) below and will identify the management intensity for timber production for each category of land, which results in the largest excess of discounted benefits less discounted costs.

(i) Direct benefits are expressed by expected gross receipts to the government. Such receipts will be based upon expected stumpage prices from timber harvest considering future supply and demand situation for timber, timber production goals of the Regional plan, and § 219.5(c)(6).

(ii) Direct costs include the anticipated investments, maintenance, operating, and management and planning costs attributable to timber production activities, including mitigation measures necessitated by the impacts of timber production.

(iii) Economic analysis must consider costs and returns of managing the existing timber inventory in addition to long-term potential yield.

(3) During formulation and evaluation of each alternative as required under § 219.5(f) and (g), combinations of resource management practices will be defined to meet management objectives for the various multiple uses including outdoor recreation, timber, watershed, range, wildlife and fish, and wilderness. The formulation and evaluation will consider the costs and benefits of alternative management intensities for timber production from paragraph (2) in accordance with § 219.5(f)(v). Lands will be tentatively identified as not suited for timber production if:

(i) Based upon a consideration of multiple-use objectives for the alternative, the land is proposed for resource uses that preclude timber production, such as wilderness;

(ii) Other management objectives for the alternative limit timber production activities to the point where silviculture standards and guidelines set forth in § 219.13 cannot be met; or

(iii) The lands are not cost-efficient in meeting Forest objectives including timber production for the alternative

under consideration over the time period of the program.

(4) Selection among alternatives will be done in accordance with § 219.5(i). Lands identified as tentatively not suited in paragraph (b)(3) of this section will be designated as not suited for timber production in the selected alternative.

(c) When vegetation is altered by management, the methods, timing, and intensity of the practices determine the level of benefits that can be obtained from the affected resources. The vegetation management practices chosen for each vegetation type and circumstance will be defined in the forest plan with applicable standards and guidelines and the reasons for the choices. Where more than one vegetation management practice will be used in a vegetation type, the conditions under which each will be used will be based upon thorough reviews of technical and scientific literature and practical experience, with appropriate evaluation of this knowledge for relevance to the specific vegetation and site conditions. On National Forest System land, the vegetation management practice chosen will comply with the management standards and guidelines specified in § 219.13(c).

(d) The selected forest management alternative includes the timber harvest schedule which provides the allowable sale quantity. The harvest schedule of each alternative, including those which depart from base harvest schedules, will be formulated in compliance with § 219.5(c) and the criteria in paragraphs (1) and (2) of this paragraph.

(1) Alternatives will be formulated that include determinations of the quantity of the timber that may be sold during the planning period. These quantity determinations will be based on the principle of sustained yield and will meet the constraints set out in § 219.13. For each management alternative, the determination will include a calculation of the long-term sustained-yield capacity and the base harvest schedule and when appropriate, a calculation of timber harvest alternatives that may depart from the base harvest schedule as provided in paragraphs (i) through (iii) of this paragraph.

(i) For the base harvest schedules the planned sale and harvest for any future decade will be equal to or greater than the planned sale and harvest for the preceding decade of the planning periods provided that the planned harvest is not greater than the long-term sustained-yield capacity consistent with the management objectives of the alternative.

(ii) The determinations of the appropriate long-term sustained-yield capabilities, base harvest schedules, and departure alternatives to the base harvest schedule will be made on the basis of the guidelines which follows:

(A) For the long-term sustained-yield capacities and the base harvest schedules, assume an intensity of management and degree of timber utilization consistent with the goals, assumptions, and standards contained in, or used in the preparation of the current Program and regional plan. For the base harvest schedule, the management and utilization assumptions will reflect the projected changes in practices for the four decades contained in, or used in the preparation of the current Program and regional plan. Beyond the fourth decade, the assumptions will reflect those projected for the fourth decade of the regional plan;

(B) For alternatives with harvest schedules which depart from the corresponding base harvest schedule, assume an appropriate management intensity;

(C) In accordance with the established standards, assure that all even-aged stands scheduled to be harvested during the planning period will generally have reached the culmination of mean annual increment of growth. Mean annual increment will be based on management intensities and utilization standards assumed in paragraphs (ii) (A) and (B) above and expressed as units of measure consistent with the regional plan. Exceptions to these standards are permitted for the use of sound silvicultural practices, such as thinning or other stand improvement measures; for salvage or sanitation harvesting of timber stands which are substantially damaged by fire, windthrow or other catastrophe, or which are in imminent danger from insect or disease attack; or for the removal of particular species of trees after consideration has been given to the multiple uses of the area being planned and after completion of the public participation process applicable to the preparation of a forest plan; and

(D) Each harvest schedule will provide for a forest structure that will enable perpetual timber harvest at the long-term sustained-yield capacity, and multiple-use objectives of the alternative.

(iii) Alternatives with harvest schedules which depart from the principles of paragraph (i) above and will lead to better attaining the overall objectives of multiple-use management will be considered and formulated when any of the following conditions are indicated:

(A) High mortality losses from any cause can be significantly reduced or prevented or forest age-class distribution can be improved, facilitating future sustained yield management;

(B) Implementation of the corresponding base harvest schedule would cause a substantial adverse impact upon a community in the economic area in which the forest is located;

(C) None of the alternatives already considered provides a timber harvest schedule that achieves the goals of the Program as provided in § 219.4(b).

(2) The harvest schedule of the management alternative selected in accordance with § 219.5(i) provides the allowable sale quantity (the quantity of timber that may be sold from the area of land covered by the forest plan) for the plan period. If the selected harvest schedule is not the base timber harvest schedule for the designated forest planning area, the forest plan will be transmitted to the Chief, Forest Service, for approval. The decision of the Chief may be appealed to the Secretary pursuant to the procedures in § 211.19 of this chapter.

(e) Lands reviewed for Wilderness designation under the review and evaluation of roadless areas conducted by the Secretary of Agriculture but not designated as wilderness or designated for further planning and lands whose designation as primitive areas has been terminated will be managed for uses other than wilderness in accordance with this subpart. No such area will be considered for designation as wilderness until a revision of the forest plan under § 219.11(f). When revising the forest plan, roadless areas of public lands within and adjacent to the forest, will be evaluated and considered for recommendation as potential wilderness areas, as provided in paragraphs (e) (1) and (2) of this paragraph.

(1) During analysis of the management situation the following areas will be designated for evaluation:

(i) All previously inventoried wilderness resources not yet designated;

(ii) Areas contiguous to existing wilderness, primitive areas, or administratively proposed wildernesses, regardless of which agency has jurisdiction for the wilderness or proposed wilderness.

(iii) Areas, regardless of size, that are contiguous to roadless and undeveloped areas in other Federal ownership that have identified wilderness potential; and

(iv) Areas designated by Congress for wilderness study, administrative proposals pending before Congress, and other legislative proposals pending

which have been endorsed by the administration.

(2) Each area designated for evaluation under paragraph (1) above will be evaluated in terms of current national guidelines or, in their absence, by criteria developed by the interdisciplinary team with public participation. In the latter case, the criteria will include as a minimum:

(i) The values of the area as wilderness;

(ii) The values foregone and effects on management of adjacent lands as a consequence of wilderness designation;

(iii) Feasibility of management as wilderness, in respect to size, non-conforming use, land ownership patterns, and existing contractual agreements or statutory rights;

(iv) Proximity to other designated wilderness, and relative contribution to the National Wilderness Preservation System; and

(v) The anticipated long-term changes in plant and animal species diversity, including the diversity of natural plant and animal communities of the forest planning area and the effects of such changes on the values for which wilderness areas were created.

(f) The forest plan will provide direction for the management of designated wilderness and primitive areas in accordance with the provisions of Part 293. In particular, it will:

(1) Provide for limiting and distributing visitor use of specific portions in accord with periodic estimates of the maximum levels of use that allow natural processes to operate freely and that do not impair the values for which wilderness areas were created; and

(2) Evaluate the extent to which wildfire, insect, and disease control measures may be desirable for protection of either the wilderness or adjacent areas and provide for such measures when appropriate.

(g) Fish and wildlife habitats will be managed to maintain viable populations of all existing native vertebrate species in the planning area and to maintain and improve habitat of management indicator species. To meet this goal, management planning for the fish and wildlife resource will meet the requirements set forth in paragraphs (1) through (7) of this paragraph and be guided by Chapter 2620, Forest Service Manual.

(1) The desired future condition of fish and wildlife, where technically possible, will be stated in terms both of animal population trends and of amount and quality of habitat.

(2) Management indicator species, vertebrate and/or invertebrate, will be

identified for planning, and the reasons for their selection will be given. The species considered will include at least: Endangered and threatened plant and animal species identified on State and Federal lists for the planning area; species with special habitat needs that may be influenced significantly by planned management programs; species commonly hunted, fished, or trapped; and additional plant or animal species selected because their population changes are believed to indicate effects of management activities on other species of a major biological community or on water quality. On the basis of available scientific information, the effects of changes in vegetation type, timber age classes, community composition, rotation age, and year-long suitability of habitat related to mobility of management indicator species will be estimated. Where appropriate, measures to mitigate adverse effects will be prescribed.

(3) Biologists from State fish and wildlife agencies and other Federal agencies will be consulted in order to coordinate planning with State plans for fish and wildlife.

(4) Access and dispersal problems of hunting, fishing, and other visitor uses will be considered.

(5) The effects of pest and fire management on fish and wildlife populations will be considered.

(6) Population trends of the management indicator species will be monitored and relationships to habitat changes determined. This monitoring will be done in cooperation with State fish and wildlife agencies, to the extent practicable.

(7) Critical habitat for threatened and endangered species will be determined, and measures will be prescribed to prevent the destruction or adverse modification of such habitat. Objectives will be determined for threatened and endangered species that will provide for, where possible, their removal from listing as threatened and endangered species through appropriate conservation measures, including the designation of special areas to meet the protection and management needs of such species.

(h) Identify lands suitable for grazing and browsing in accordance with criteria in paragraphs (1) through (3) of this paragraph and as guided by Chapter 2210, Forest Service Manual.

(1) The procedures used will include, but not be limited to, the following:

(i) Range condition and trend studies;

(ii) Records of estimated actual use by domestic livestock, feral animals and management indicator species of

wildlife, and estimated percentage utilization of key forage species;

(iii) An estimate of the capability of the rangelands to produce suitable food and cover for the management indicator species of wildlife; and

(iv) An estimate of the present and potential supply of forage for sheep, cattle, and feral animals.

(2) In the analysis of management situation, assess the capability of the planning area to produce forage without permanent impairment of the resources, considering the condition of the vegetation, statutory, and administrative withdrawals, characteristics of soil and slope, and accessibility to grazing and browsing animals.

(3) Alternative range management practices will consider:

(i) Grazing management systems;

(ii) Methods of altering successional stages for range management objectives, including vegetation manipulation as described in § 219.13(c);

(iii) Evaluation of pest problems, and availability of integrated pest management systems;

(iv) Possible conflicts or beneficial interactions among domestic, feral, and wild animal populations, and methods of regulating these;

(v) Physical facilities such as fences, water development, and corrals, necessary for efficient management;

(vi) Existing permits, cooperative agreements, and related obligations; and

(vii) Measures to protect, manage, and control wild free-roaming horses and burros as provided in Part 222, Subpart B of this chapter.

(i) A broad spectrum of dispersed and developed recreation opportunities in accord with identified needs and demands will be provided. Planning to achieve this will be governed by the goals of the regional plan, the requirements of paragraphs (1) through (8) of this section, and be guided by Chapter 2310, Forest Service Manual.

(1) Forest planning will identify:

(i) The physical and biological characteristics that make land suitable for recreation opportunities;

(ii) The recreational preferences of user groups; and the settings needed to provide quality recreation opportunities;

(iii) Recreation opportunities on the National Forest System lands.

(2) The supply of developed recreational facilities in the area of national forest influence will be appraised for adequacy to meet present and future demands.

(3) Alternatives will include consideration of establishment of physical facilities, regulation of use, and recreation opportunities responsive to current and anticipated user demands.

(4) In formulation and analysis of alternatives as specified in § 219.5(f) and (g), interactions among recreation opportunities and other multiple uses will be examined. This examination will consider the impacts of the proposed recreation activities on other uses and values and the impacts of other uses and activities associated with them on recreation opportunities, activities, and quality of experience.

(5) Formulation and evaluation of alternatives under paragraphs (3) and (4) above will be coordinated to the extent feasible with present and proposed recreation activities of local and State land use or outdoor recreation plans, particularly the State Comprehensive Outdoor Recreation Plan and recreation opportunities already present and available on other public and private lands, with the aim of reducing duplication in meeting recreation demands.

(6) The visual resource will be inventoried and evaluated as an integrated part of the forest planning process, addressing both the landscapes visual attractiveness and the public's visual expectation. As guided by chapter 2380, Forest Service Manual, definitive land areas of the forest will have a visual quality objective assigned as a part of the management prescription to direct management practices and the management of the visual resource.

(7) Off-road vehicle use will be planned and implemented to minimize adverse effects on the land and resources, promote public safety, and minimize conflicts with other uses of the National Forest System lands. Forest planning will evaluate the potential effects of vehicle use off-roads and, on the basis of the requirements of Part 295, of this chapter and be guided by in Chapter 2355, Forest Service Manual, classify areas and trails of National Forest System lands as to whether or not off-road vehicle use may be permitted.

(i) The effects of mineral exploration and development in the planning area will be considered in the management of renewable resources. When available, the following will be recognized in the forest plan:

(1) Active mines within the area of land covered by the forest plan;

(2) Outstanding or reserved mineral rights;

(3) The probable occurrence of various minerals, including locatable, leasable, and common variety;

(4) The potential for future mineral development and potential for withdrawal from development and

(5) The probable effect of renewable resource allocations and management

on mineral resources and activities, including exploration and development.

(k) Planning the management of the water and soil resources will be in accordance with paragraphs (1) through (8) of this paragraph, and be guided by Chapter 2510, Forest Service Manual.

(1) Current water uses, both consumptive and non-consumptive, within the area of land covered by the forest plan, including instream flow requirements, will be determined, in cooperation with appropriate government entities.

(2) Existing impoundments, transmission facilities, wells, and other man-made developments on the area of land covered by the forest plan will be identified.

(3) The probable occurrence of various levels of water volumes, including extreme events which would have a major impact on the planning area, will be estimated.

(4) Plans must comply with the requirements of the Federal Water Pollution Control Act, as amended by the Clean Water of 1972, the Safe Drinking Water Act, and all substantive and procedural requirements of Federal, State, and local governmental bodies with respect to the provision of public water systems and the disposal of waste water.

(5) Existing or potential watershed conditions that will influence soil productivity, water yield, water pollution, or hazardous events, will be evaluated.

(6) Measures, as directed in applicable Executive Orders, to minimize risk of flood loss and to restore and preserve floodplain values, and to protect wetlands, will be adopted.

(l) Forest planning will provide for the identification, protection, interpretation and management of cultural resources on National Forest System lands. Planning for the resource will be governed by the requirements of Federal laws pertaining to historic preservation, and be guided by Chapter 2360, Forest Service Manual, and the criteria in paragraphs (1) through (3) of this paragraph.

(1) Forest planning will:

(i) Provide an overview of known data relevant to history, ethnography, and prehistory of the area under consideration, including known cultural resource sites;

(ii) Identify areas requiring more intensive inventory;

(iii) Provide for evaluation and identification of sites for the National Register of Historic Places;

(iv) Provide for establishing measures for the protection of cultural resources

from vandalism and other human predation, and natural destruction;

(v) Identify the need for maintenance of historic sites on, or eligible for inclusion in, the National Register of Historic Places; and

(vi) Identify opportunities for interpretation of cultural resources for the education and enjoyment of the American public.

(2) In the formulation and analysis of alternatives, interactions among cultural resources and other multiple uses will be examined. This examination will consider impacts of the management of cultural resources on other uses and activities and impacts of other uses and activities on cultural resource management.

(3) Formulation and evaluation of plan alternatives will be coordinated to the extent feasible with the State cultural resource plan and planning activities of the State Historic Preservation Office and State Archaeologist and with other State and Federal agencies.

(m) Forest planning will provide for the establishment of Research Natural Areas (RNAs). Planning will make provision for the identification of examples of important forest, shrubland, grassland, alpine, aquatic, and geologic types that have special or unique characteristics of scientific interest and importance and that are needed to complete the national network of RNAs. Biotic, aquatic, and geologic types needed for the network will be identified using a list provided by the Chief, Forest Service. Authority to establish RNA's is delegated to the Chief in § 2.80(a) of Title 7 CFR and in § 251.23 of this chapter. Recommendations for establishment of areas will be made through the planning process and according to the guidance for the selection of areas for RNAs and for the preparation of establishment reports as provided in section 4063, Forest Service Manual.

§ 219.13 Management standards and guidelines.

(a) Management of National Forest System lands requires adherence to the planning principles stated in § 219.1; specific management requirements to be met in accomplishing goals and objectives include, as a minimum, those in paragraphs (b) through (i) of this section.

(b) All management practices will:

(1) Conserve soil and water resources, and not allow significant or permanent impairment of the productivity of the land;

(2) Minimize serious or long-lasting hazards from flood, wind, wildfire, erosion, or other natural physical forces

unless these are specifically accepted, as in Wilderness;

(3) Prevent or reduce serious, long-lasting hazards from pest organisms under the principles of integrated pest management;

(4) Protect streams, streambanks, shorelines, lakes, wetlands, and other bodies of water as provided under paragraphs (e) and (f) of this section;

(5) Provide for and maintain diversity of plant and animal communities to meet overall multiple-use objectives, as provided in paragraph (g) of this section;

(6) Be monitored and evaluated as required in § 219.5(k) to assure that practices protect soil, watershed, fish, wildlife, recreation, and aesthetic values; maintain vegetative productivity; and reduce hazards from insects, disease, weed species, and fire;

(7) Be assessed prior to project implementation for potential physical, biological, aesthetic, cultural, engineering, and economic impacts and for consistency with multiple uses planned for the general area;

(8) Ensure that fish and wildlife habitats are managed to maintain viable populations of all existing native vertebrate species and to improve habitat of selected species, coordinated with appropriate State fish and wildlife agencies and monitored in cooperation with these agencies, to the extent practicable;

(9) Include measures for preventing the destruction or adverse modification of critical habitat for threatened and endangered species;

(10) Provide that any existing transportation and utility corridor, and any right-of-way that is capable of accommodating the facility or use from an additional compatible right-of-way, be designated as a right-of-way corridor. Subsequent right-of-way grants will, to the extent practicable, and as determined by the responsible official, be confined to designated corridors;

(11) Ensure that any roads constructed through contracts, permits, or leases are designed according to standards appropriate to the planned uses, considering safety, cost of transportation, and effects upon lands and resources;

(12) Provide that all roads are planned and designed to re-establish vegetative cover on the total disturbed area within a reasonable period of time, not to exceed 10 years after the termination of a contract, lease or permit, unless the road is determined necessary as a permanent addition to the National Forest Transportation System; and

(13) Maintain air quality at a level that is adequate for the protection and use of National Forest System resources and

that meets or exceeds applicable Federal, State and/or local standards or regulations, and as further guided by Chapter 2120, Forest Service Manual.

(c) Management prescriptions that involve vegetation manipulation of tree cover for any purpose will:

(1) Be best suited to the multiple-use goals established for the area with all potential environmental, biological, cultural resource, aesthetic, engineering, and economic impacts, as stated in the regional and forest plans, being considered in this determination;

(2) Assure that lands can be adequately restocked as provided in paragraph (h)(3) of this section, except where permanent openings are created for wildlife habitat improvement, vistas, recreation uses and similar practices;

(3) Not be chosen primarily because they will give the greatest dollar return or the greatest output of timber, although these factors will be considered.

(4) Be chosen after considering potential effects on residual trees and adjacent stands;

(5) Avoid permanent impairment of site productivity and ensure conservation of soil and water resources;

(6) Provide the desired effects on water quantity and quality, wildlife and fish habitat, regeneration of desired tree species, recreation uses, aesthetic values, and resource yields; and

(7) Be practical in terms of transportation and harvesting requirements, and total costs of preparation, logging, and administration.

(d) When openings are created in the forest by the application of even-aged silviculture, the provisions of paragraphs (1) and (2) of this paragraph apply.

(1) The blocks or strips cut will be shaped and blended with the natural terrain to achieve aesthetic and wildlife habitat objectives to the extent practicable. Openings will be located to achieve the desired combination of multiple objectives. Regional plans will provide guidance on the dispersion of openings, and size variations of openings, in relation to topography, climate, geography, local land use patterns, forest type and other factors. The regional plan will specify the state of vegetation to be reached before a cutover is no longer considered an opening.

(2) Individual cut blocks, patches, or strips will conform to the maximum size limits for areas to be cut in one harvest operation established by the regional plan according to geographic areas and forest types. This limit may be less than, but will not exceed, 60 acres for the

Douglas-fir forest type of California, Oregon, and Washington; 80 acres for the southern yellow pine types of Alabama, Arkansas, Georgia, Florida, Louisiana, Mississippi, North Carolina, South Carolina, Oklahoma, and Texas; 100 acres for the hemlock-sitka spruce forest type of coastal Alaska; and 40 acres for all other forest types except as provided in paragraphs (i) through (iii) of this paragraph:

(i) Cut openings larger than those specified may be permitted where larger units will produce a more desirable combination of benefits. Such exceptions will be provided for in regional plans. The following factors will be considered in determining size limits by geographic areas and forest types: Topography; relationship of units to other natural or artificial openings and proximity of units; coordination and consistency with adjacent forests and regions; effect on water quality and quantity; visual absorption capability; effect on wildlife and fish habitat; regeneration requirements for desirable tree species based upon the latest research findings; transportation and harvesting system requirements; natural and biological hazards to survival of residual trees and surrounding stands; and relative total costs of preparation, logging, and administration of harvest cuts of various sizes. Specifications for exceptions will include the particular conditions under which the larger size is permitted and set a new maximum size permitted under those conditions.

(ii) The size limits may be exceeded on an individual timber sale basis after 60 days public notice and review by the regional forester.

(iii) The established limit will not apply to the size of areas harvested as a result of natural catastrophic condition such as fire, insect and disease attack, or windstorm.

(e) Special attention will be given to land and vegetation for approximately 100 feet from the edges of all perennial streams, lakes, and other bodies of water and will correspond to at least the recognizable area dominated by the riparian vegetation. No management practices causing detrimental changes in water temperature or chemical composition, blockages of water courses, and deposits of sediment will be permitted within these areas which seriously and adversely affect water conditions or fish habitat. Topography, vegetation type, soil, climatic conditions, management objectives, and other factors will be considered in determining what management practices may be performed within these areas or the constraints to be placed upon their performance.

(f) Conservation of soil and water resources involves the analysis, protection, enhancement, treatment, and evaluation of soil and water resources, and their responses under management and will be guided by instructions in official technical handbooks. These handbooks must show specific ways to avoid or mitigate damage, and maintain or enhance productivity on specific sites. These handbooks may be regional in scope or, where feasible, specific to physiographic or climatic provinces.

(g) The selected alternative will provide for diversity of plant and animal communities and tree species to meet the overall multiple-use objectives of the planning area. Diversity of plant and animal communities and tree species will be considered throughout the planning process. Inventories will include quantitative data making possible the evaluation of diversity in terms of its prior and present condition. For each planning alternative, the interdisciplinary team will consider how diversity will be affected by various mixes of resource outputs and uses, including proposed management practices. To the extent consistent with the requirement to provide for diversity, management prescription, where appropriate and to the extent practicable, will preserve and enhance the diversity of plant and animal communities, including endemic and desirable naturalized plant and animal species, so that it is at least as great as that which would be expected in a natural forest and the diversity of tree species similar to that existing in the planning area. Reductions in existing diversity of plant and animal communities and tree species will be prescribed only where needed to meet overall multiple-use objectives. Planned type conversion will be justified by an analysis showing biological, economic, social, and environmental design consequences, and the relation of such conversions to the process of natural change.

(h) The management requirements in paragraphs (1) through (7) of this paragraph apply to timber harvest and cultural treatments.

(1) No timber harvesting will occur during the planning period on lands classified as not suited for timber production pursuant to § 219.12(b) (1) through (5) except as necessary to protect other multiple-use values or activities that meet other objectives on such lands if the forest plan establishes that such actions are appropriate.

(2) The selected harvest schedule provides the allowable sale quantity, the quantity of timber that may be sold from the capable, available, and suitable land

covered by the forest plan during the planning period. Within the planning period, the volume of timber to be sold in any one year may exceed the average annual allowable sale quantity so long as the total amount sold for the planning period does not exceed the allowable sale quantity. Nothing in this paragraph prohibits salvage or sanitation harvesting of timber stands which are substantially damaged by fire, windthrow, or other catastrophe, or which are in imminent danger of insect or disease attack and where consistent with silvicultural and environmental standards. Such timber may either substitute for timber that would otherwise be sold under the plan or, if not feasible, be sold over and above the planned volume.

(3) When trees are cut to achieve timber production objectives, the cuttings will be made in such a way as to assure that lands can be adequately restocked within 5 years after final harvest. Research and experience will indicate that the harvest and regeneration practices planned can be expected to result in adequate restocking. Adequate restocking means that the cut area will contain the minimum number, size distribution, and species composition of regeneration as specified in regional silvicultural guides attached to the forest plan for each forest type. Five years after final harvest means 5 years after clearcutting, 5 years after final overstory removal in shelterwood cutting, 5 years after the seed tree removal cut in seed tree cutting, or 5 years after selection cutting.

(4) Cultural treatments such as thinning, weeding, and other partial cutting may be included in the forest plan where they are intended to increase the rate of growth of remaining trees, favor commercially valuable tree species, favor species or age classes which are most valuable for wildlife, or achieve other multiple-use objectives.

(5) Harvest levels based on intensified management practices will be decreased no later than the end of each planning period if such practices cannot be completed substantially as planned.

(6) Timber harvest cuts designed to regenerate an even-aged stand of timber will be carried out in a manner consistent with the protection of soil, watershed, fish and wildlife, recreation, and aesthetic resources, and the regeneration of the timber resource.

(7) Timber will not be harvested where such treatment would favor an abnormal increase in injurious insects and disease organisms.

(i) Monitoring will ensure as a minimum that:

(1) Lands are adequately restocked as specified in the Forest Plan;

(2) Lands identified as not suited for timber production will be examined at least every 10 years to determine if they have become suitable; if determined suited such lands will be returned to timber production.

(3) Maximum size limits for harvest areas are evaluated to determine whether such size limits should be continued; and

(4) Destructive insects and disease organisms do not increase following management activities.

§ 219.14 Research.

(a) Research needs for management of the National Forest System will be identified during planning and continually reviewed during evaluation of implemented plans. Particular attention will be given to research needs identified during the monitoring and evaluation described in § 219.5(k). These identified needs will be included in formulating overall research programs and plans which involve private as well as public forest and rangelands.

(b) Research needed to support or improve management of the National Forest System will be established and budgeted at the research station and national levels. Priorities for this portion of the Forest Service Research Program will be based upon the information gathered at all planning levels of the National Forest System.

(c) An annual report will be prepared at the national level with assistance from Regions and Stations which will include, but not be limited to, a description of the status of major research programs which address National Forest System needs for Research, significant findings, and how this information is to be or has recently been applied.

§ 219.15 Revision of regulations.

The regulations in this subpart will be regularly reviewed and, when appropriate, revised. The first such review will be completed no later than 6 years after the approval date of these regulations. Additional reviews will occur at least every 5 years thereafter.

§ 219.16 Transition period.

(a) Until a forest planning area of the National Forest System land is managed under a forest plan developed pursuant to these regulations and approved by the regional forester, the land may continue to be managed under existing land use and resource plans. As soon as practicable, existing plans will be amended or revised to incorporate standards and guidelines in this subpart.

Pending approval of a forest plan, existing plans may be amended or revised to include management requirements not inconsistent with the provisions of the Forest and Rangeland Renewable Resources Planning Act, as amended, and these regulations.

(b) A forest plan may become effective prior to the development and approval of its related regional plan, provided that the forest plan will be reviewed upon regional plan approval, and if necessary, amended to comply with regional management direction. If such an amendment is significant, it will be made pursuant to the requirements for the development of a forest plan.

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Appendix D

A FOREST POLICY BIBLIOGRAPHY

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